

ANNUAL REPORT 1998

CHEMICAL AND BIOLOGICAL DEFENSE COMMAND



CBD COM

Adapting change, to maintain excellence through opportunity

Key Points of Contact for the Soldier and Biological Chemical Command

Headquarters

MG John Doesburg	Commander	(410)436-4361
Mr. Michael Parker	Deputy to the Commander	(410)436-4364
COL C. Rundell Galles	Chief of Staff	(410)436-2167

Strategy, Resourcing, and Support Enterprise

Ms. Donna Shandle	Enterprise Leader	(410)436-2167
Mr. Gene Cantemiry	Deputy	(410)436-4459

Operations Enterprise

COL Larry Sparks	Leader, Operations Enterprise	(410)436-4363
Mr. Dick Roux	Deputy, Program Integration	(410)436-7689
LTC Douglas Norton	Commander, US Army Technical Escort Unit	(410)436-3044

Research Development and Aquisition Enterprise

COL (P) Jesus Mangual	Leader, RDA Enterprise	(508)233-5524
Mr. J.H. Zarzycki	Leader, Edgewood Chemical Biological Center	(410)436-5501
Dr. Jim Savage	Leader, Advanced Systems Concepts	(410)436-2456
Mr. Dave Francis	Leader, Chemical Biological Services	(410)436-3510
Mr. Phil Brandler	Leader, Natick Soldier Center of Excellence	(508)233-4700
Dr. John Ferriter	Leader, Engineering	(410)436-5600
Dr. I. Gary Resnick	Leader, Research and Technology	(410)436-3250

Mr. Bruce Jezek	Program Director, Biological Defense Systems	(410)436-2835
COL Stephen Reeves	Project Manager NBC Defense Systems	(410)436-2566
LTC Christopher Parker	Product Manager Smoke and Obscurants	(410)436-2804
COL Bruce Jette	Project Manager Soldier	(703)704-3819
LTC Brian C. Keller	Product Manager Soldier Support	(508)233-5312
LTC Michael E. P. Davis	Product Manager Force Provider	(508)233-5572



Key Points of Contact for the Soldier and Biological Chemical Command

Headquarters

MG John Doesburg	Commander	(410)436-4361
Mr. Michael Parker	Deputy to the Commander	(410)436-4364
COL C. Rundell Galles	Chief of Staff	(410)436-2167

Strategy, Resourcing, and Support Enterprise

Ms. Donna Shandle	Enterprise Leader	(410)436-2167
Mr. Gene Cantemiry	Deputy	(410)436-4459

Operations Enterprise

COL Larry Sparks	Leader, Operations Enterprise	(410)436-4363
Mr. Dick Roux	Deputy, Program Integration	(410)436-7689
LTC Douglas Norton	Commander, US Army Technical Escort Unit	(410)436-3044

Research Development and Aquisition Enterprise

COL (P) Jesus Mangual	Leader, RDA Enterprise	(508)233-5524
Mr. J.H. Zarzycki	Leader, Edgewood Chemical Biological Center	(410)436-5501
Dr. Jim Savage	Leader, Advanced Systems Concepts	(410)436-2456
Mr. Dave Francis	Leader, Chemical Biological Services	(410)436-3510
Mr. Phil Brandler	Leader, Natick Soldier Center of Excellence	(508)233-4700
Dr. John Ferriter	Leader, Engineering	(410)436-5600
Dr. I. Gary Resnick	Leader, Research and Technology	(410)436-3250

Mr. Bruce Jezek	Program Director, Biological Defense Systems	(410)436-2835
COL Stephen Reeves	Project Manager NBC Defense Systems	(410)436-2566
LTC Christopher Parker	Product Manager Smoke and Obscurants	(410)436-2804
COL Bruce Jette	Project Manager Soldier	(703)704-3819
LTC Brian C. Keller	Product Manager Soldier Support	(508)233-5312
LTC Michael E. P. Davis	Product Manager Force Provider	(508)233-5572

CBDCOM FY98 Mission Statement

(CBDCOM merged with SSCOM to form SBCCOM)

Provide RDA for Nuclear Biological Chemical (NBC) and obscurant equipment for U.S. forces; act as the Army NBC defense commodity command; provide management of joint service NBC defense materiel; provide US chemical stockpile management and safe storage; provide installation management; prepare for, and respond to, Chemical Biological emergency events/accidents; provide weapons of mass destruction (chemical or biological) domestic preparedness support; conduct emergency remediation/restoration actions at chemical sites; provide successful planning, management, and execution of treaty responsibilities; and provide demilitarization support.

COMMANDER'S MESSAGE

I am pleased to present the last Annual Report from the Chemical and Biological Defense Command (CBDCOM). This Annual Report provides an overview of our accomplishments against the Fiscal Year 1998 Command strategic goals. FY98 can best be characterized as a year of success in the midst of organizational transition. We continued to work toward our strategic goals concurrent with working towards the merger of CBDCOM with the Soldier Systems Command (SSCOM). Our efforts presented in this report exemplify our dedication to excellence and commitment to remaining the Nation's recognized leader in nuclear, biological and chemical (NBC) defense and smoke/obscurant systems.



Our new organization, the Soldier and Biological Chemical Command (SBCCOM), will focus on a "one stop shop" concept to provide food, clothing, shelter and equipment for the individual soldier in an NBC or non-NBC battlespace environment. We will continue our mission to support international arms control treaties; maintain partnerships to ensure the safe storage and chemical demilitarization of the nation's chemical stockpile; and support NBC defense logistics readiness and sustainment efforts. The SBCCOM will proceed with the management of the nation's eight chemical stockpile sites and Rocky Mountain Arsenal. The new Command will leverage prior experience in individual and collective protection to blend NBC protection into the individual ensemble and shelters.

Public and workforce safety at the stockpile locations is priority number one and we take the job of storing and handling the nation's chemical stockpile very seriously. Our Site Commanders have all the prevention and response measures required to mitigate any chemical stockpile incident. We are proud of our long standing record of performance in this area, and remain committed to assisting the Program Manager for Chemical Demilitarization to ensure that the chemical stockpile is safely destroyed in accordance with the Chemical Weapons Convention.

We continued to function as the Department of Defense's lead for execution of the Domestic Preparedness program. During FY98, the Command made great strides toward achieving program goals and objectives. Execution of the Domestic Preparedness program is tailor made to our chemical and biological expertise. The CBDCOM moved forward with the execution of the train-the-trainer and exercise portion of the program and

continued to provide expert advice regarding emergency response for weapons of mass destruction to federal, state and local emergency responders. Our efforts remain focused on preparing our civilian population on how to respond to terrorist use of weapons of mass destruction, through partnership with various agencies, to mitigate loss of life.

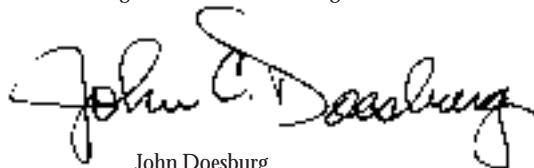
Our environmental accomplishments in FY98 are consistent with the aggressive schedule to remediate and restore the Rocky Mountain Arsenal to the U.S. Wildlife and Fisheries Service by 2008. We continue to work with industry to complete environmental projects at each stockpile site to ensure that these sites can be transitioned to community authority once the demilitarization process is complete.

During FY98, the Command demonstrated commitment to meeting the needs of customers by completing 22 milestones on time, an improvement from last year. Customer satisfaction remained constant from previous years, but we still need to improve in this vital area. We initiated steps to reduce the lifecycle cost of NBC defense and smoke/obscurant systems. An example of our commitment to lifecycle cost reduction was the award of the 1998 DoD Logistics Lifecycle Reduction Award to the M157A2 Smoke Generator. We are committed to continuing to field equipment on time and at reduced cost.

Our Command has been, and must remain proactive in offering our CB technical expertise to the Joint Services, federal, state, local and international agencies. User validation is the key to evaluating our success in delivering science and technology programs to meet or exceed our customers expectations. We continue our efforts to remain the organization of choice for chemical, biological and smoke /obscurant research development and technology services.

We focused on continuous improvement in our management practices during the fiscal year. The best practices from both CBDCOM and SSCOM will put to use to create the most efficient combined Command. We will expand on our existing partnerships with industry, the four Services, DoD and other government agencies to share resources and responsibility consistent with Command goals. We will use our values to guide us to continuously improving management practices.

Our goal is excellence in all we do. We worked this past year to meet our goals, and as a new Command in FY99, we will pursue our objective to be the best organization for our warfighters and for the nation.



John Doesburg

Major General, U.S. Army

Commanding

GOAL ONE

Ensure Public and Workforce Safety and Protection of the Environment in Terms of the Storage Handling and Local Transport of the Nation's Chemical Stockpile.

CBDCOM is safely storing over 19000 tons of chemical weapons/agents across our eight storage sites. The key word in our first goal is *safety*. This includes both our workforce and the community. We are continuing our partnership with the Program Manager Chemical Demilitarization as they complete their mission to destroy the stockpile in accordance

to the Chemical Weapons Convention.

Our Stockpile Response Forces are ready to respond to any chemical incident at the sites to ensure safe storage. All employees are trained on HAZMAT, explosive, and chemical regulations mandated by AMC and OSHA. We have molecular level monitors that monitor through the igloo headwalls to detect



Workers don protective suits during a training exercise. Masks, suits and oxygen are part of the protective gear workers must use when in vicinity of chemical agent.

“

You and your facility are an outstanding example of why my association with the Federal

Laboratory Consortium is time well spent.

”

Chairman of the
Federal Laboratory
Consortium

extremely low levels of agent leakage. Each site has laboratories that calibrate monitors on a daily basis. Meteorological conditions are monitored on a daily basis to assess whether scheduled operations should be conducted. Inversion weather conditions will automatically delay any operation activities scheduled for that specific day. All sites are required to submit stringent site and safety plans for all new

buildings, which must be reviewed and approved by DoD. Integrated process teams are used at each site to implement new and improved risk reduction strategies. In addition, we allow our personnel time to identify any potential safety issues and ways to mitigate potential risks.



(Top left) A ton container is loaded into an on-site container at Deseret Chemical Depot in Tooele, Utah.

(Top right) Workers routinely check all safety fittings at the eight storage facilities.

(Bottom) Earth-covered igloos in Tooele, Utah protect the chemical agent and munitions stored there, keeping the interior temperature constant.



GOAL TWO

Enhance the Federal, State and Local Agencies' Ability to Prepare for and Respond to CB Incidents

We are very proud of accomplishments made in ensuring the federal, state and local agencies are prepared to respond to a chemical or biological incident. Awareness of terrorism threat has continued to grow since Oklahoma City. The DoD was asked to take charge of the Domestic Preparedness mission for the United States and CBDCOM responded to the call. We have trained 32 cities in Domestic Preparedness in FY97 and FY98. We also support the police officers, firefighters, and emergency medical personnel, hospitals, and emergency management personnel with chemical and biological agent information from

the CB HelpLine. We are assisting senior city officials with developing, modifying and integrating current city policies and plans to better prepare and respond to a weapon of mass destruction involving CB materials.

As part of the Domestic Preparedness program we also conduct tabletop exercises with each city trained to help focus the decision making process used by the local authorities in responding to a chemical or biological event. There are also advanced exercises to provide the hands-on opportunity for the local response teams to mitigate the results of a potential terrorist attack.

We have a chemical and biological rapid response team that can respond to national and international terrorist events. Our Command is experienced in response, the Technical Escort Unit successfully responded to 106 accidents and incidents involving CB munitions.



(Top, bottom)
Local firefighters and emergency personnel took part in emergency preparedness exercises. These training exercises occurred at locations across the country.

“

The program is one of the best federal programs I've seen. The curriculum is concise and geared directly toward the target audience.

”

Battalion Chief
of the Fire Department of
Kansas City, MO

9



(Top) TEU exercise in Poland.

(Bottom) The Baltimore City Fire Department practice donning and performing basic duties in protective gear to prepare for responding to a local emergency.

GOAL THREE

Execute Remediation and Restoration of RMA ROD by 2006; Conduct all Other BRAC-Related Environmental and Remediation Activities to Ensure Closure of All Installations at End of Demilitarization

CBDCOM has teamed with private and public agencies to clean up the Rocky Mountain Arsenal area and turn it over to the Fish and Wildlife Services in 2008. We are excited with the progress we have made in the past three years. We are 22% of the way towards completion of the project. Our expertise in

the chemical area has significantly improved the clean-up efforts. The business of stockpile remediation demands an element of environmental consciousness in our business practices and all we do. We are committed to maintaining high standards in our environmental remediation efforts at other



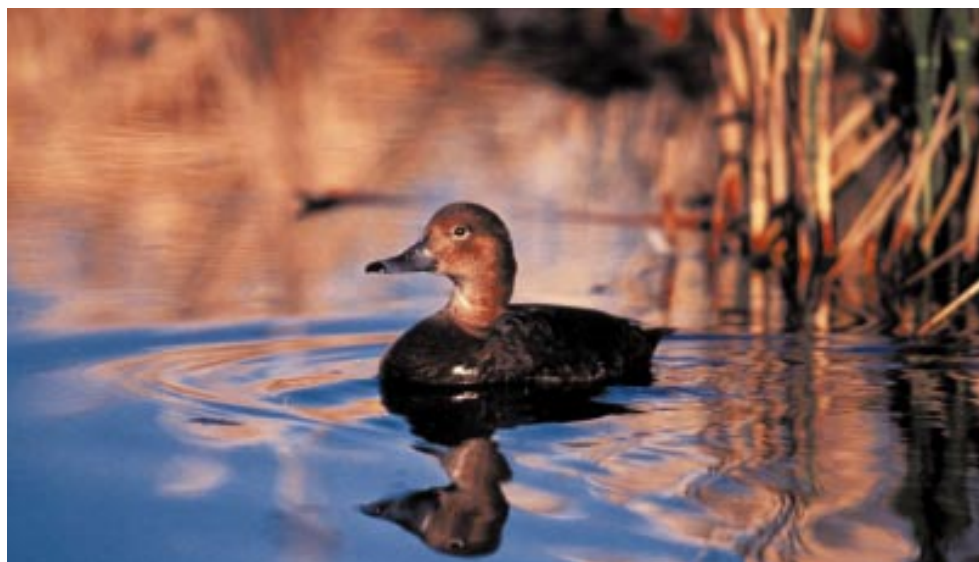
“ I received many compliments about the professionalism and pride exhibited by all the personnel involved in showcasing the unique facilities.”

Commander,
U.S. Army Materiel
Command

stockpile sites to include: Umatilla, Newport, Deseret, and Pueblo. Stockpile remediation efforts strive to return these sites to their original ecosystems capable of supporting indigenous wildlife habitats.

The remediation process can be very costly to the

Command. The Director of Risk Management is participating as the co-chair of the Standards Workgroup to assist in establishing required cleanup standards. Any proposal from this workgroup will be presented to the Full Steering Committee.



CBDCOM has been very active at the Rocky Mountain Arsenal, helping the local environment return to its former state, supporting a multitude of fish and wildlife rescue operations.

GOAL FOUR

Research, Develop, Acquire, and Field NBC Defense, Smoke and Obscurant Material that Meets Warfighter Requirements and Reduces Acquisition Costs and Timelines (i.e., Produce Products Faster and with Lower Life Cycle Costs).

Developing NBC defense equipment along with smoke and obscurant materiel is our core business. We have the expertise and innovation to develop and field equipment to assist with our soldiers avoiding contamination through detection, protective masks and clothing, and collective protection. We also develop decontamination equipment and smoke/obscurant materiel. One of our major

accomplishments this year was type classifying the Light Vehicle Obscuration Screen System (LVOSS). This system is a force multiplier, allowing our soldiers to be invisible to the enemy.

Our main objective is to deliver quality products and services that meet the customers' requirements. We constantly monitor customer needs through satisfaction surveys and strive to develop strategies that reduce product life cycle costs. The Smoke

Generator Set program team was the 1998 recipient of the OSD Life Cycle Cost Reduction Award. This award emphasizes the innovative methods employed by our Command to reduce life cycle costs.

As we strive to increase our understanding of customer requirements, CBDCOM has developed and implemented methodologies to assist customers with user validations. These validations range from Army Warfighting Experiments to Advanced Concept Technology Demonstrations (ACTDs).



(Top, bottom)
Field testing of
smoke obscurants is
a vital part of
CBDCOM's mission.
We have helped
developed
technologies that
truly help the
soldier in the field,
such as the M147A2,
pictured here.

“ The impressive display of equipment
you organized was a powerful
testimony of our commitment to
counter the threat of NBC
weapons.”

Assistant
Secretary of Defense



(Top) Field testing
of signal grenade
obscurants.
(Bottom) Interior of
the Biological
Integrated Detection
System.

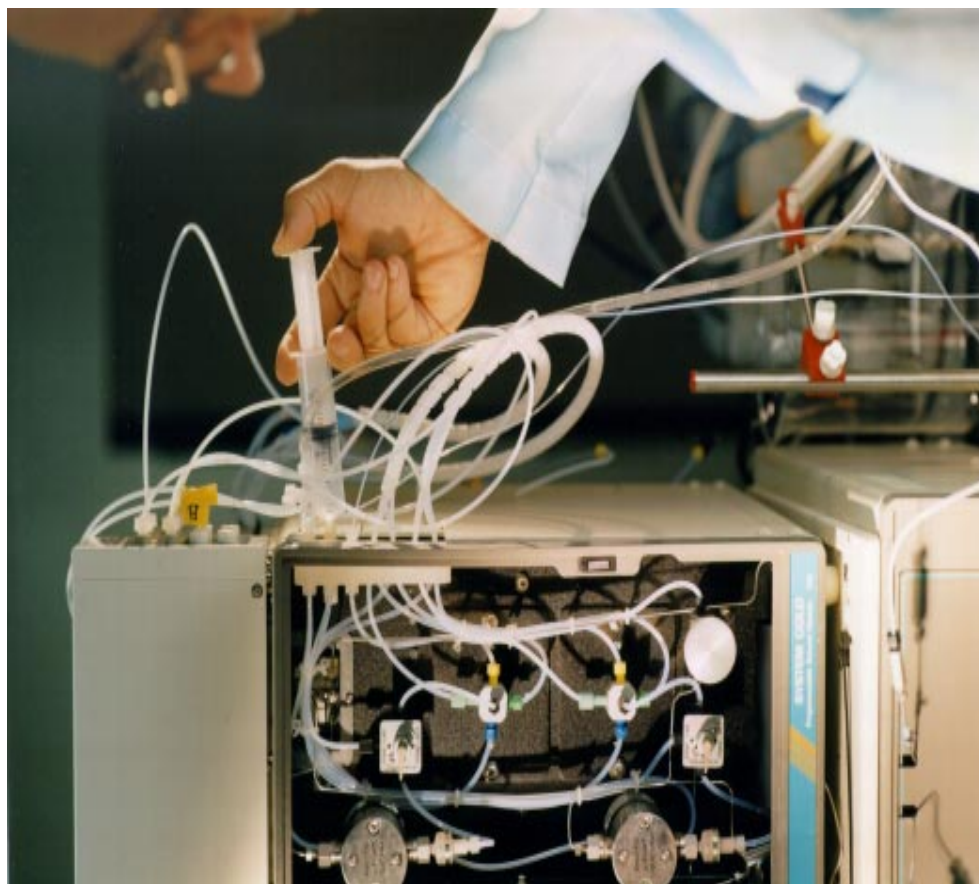
GOAL FIVE

Become the Organization of Choice for Chemical, Biological, and Smoke / Obscurant Research, Development and Technology Services



We have the expertise for chemical, biological, and smoke/obscurant materiel research, development and technology services. Our chemical biological defense expertise is recognized as the “one stop shop” element within DoD available to provide state, local, federal and international agencies with technological assistance. This includes our work to the Southwest Asia Cooperative Defense Initiative, DoD’s Force Protection Program, alternate technologies for chemical demilitarization, and the AMC Treaty Laboratory. As the number of joint service programs decrease, we continue to execute the majority of the NBC joint service programs.

Our existing customer base is dynamic and we are committed to the development of innovative service



CBD COM's labs provide research and technology assistance to federal, state, local and international agencies.

“Support from the Army Representative to the JSMG, PM NBC Defense, and PD Biological Defense has been excellent. Greatly improved over last year.”

Joint Service Materiel
Group Executive Office

strategies that are flexible, timely, and cost effective. Our customers include the Army, Air Force, Marine Corps, Navy, the Director of Safety Health and Environment, White Sands Missile Range, and Sandia National Lab. Success in meeting customer requirements has allowed our RDA Enterprise to increase customer funding. Increased visibility of our laboratory capabilities has served as the catalyst for

developing customer relationships throughout industry and elements of the CB defense community. Specifically, our individual protection equipment testing capabilities are being utilized by the Domestic Preparedness program to assure equipment meets stringent safety standards for use by the civilian Emergency Responder Community.



15



(Top) CBDCOM research on chemical and biological agents is crucial to governmental agencies around the world. (Bottom left) CBDCOM works with all branches of the military service. (Bottom right) Soldier demonstrates use and wear of protective gear.

GOAL SIX

Improve CBDCOM's Management Practices - Become a High Performance Organization

CBDCOM's commitment to innovation in management practices has positioned the Command to take advantage of new opportunities in the chemical biological defense arena well into the 21st century. Our strategy is to place Total Quality



Management at the forefront of our efforts as we strive to implement ISO certified practices into appropriate business units. The Edgewood Research Development and Engineering Center Surety Office achieved ISO 9000 certification during FY98, while maintaining certification for air monitoring operations at all the stockpile sites. We have converted the Command's communications infrastructure to ensure information is effectively managed and available to all end-users. We must continue to modify existing communications elements to maintain a competitive edge in the midst of expanding information technology. The Command Pollution Prevention (P2) in Acquisition program aggressively targets pollution at its source by reducing hazardous material requirements and waste via changes in acquisition and procurement practices. This program has targeted six acquisition and procurement practices to reduce or eliminate hazardous waste that will result in cost avoidance savings of 4.75M over a period of

CBDCOM held a workshop with our commercial partners to enhance relationships as we work towards our goals.



“

In a word, we found the opportunity to understand the Army CBD technology initiatives.

”

General Manager
of Sensor Systems,
Hughes Aircraft

two years. Hazardous waste elimination from chemical munitions monitoring, HAZMAT reduction in M8/M18 smoke and M14 thermate grenades, and reformulation of white smoke for use in training grenades are a few examples of successful program efforts.

The Chemical Weapons Convention support efforts during the past year demonstrate a unique capability that contributes to the Commands' recognition as a High Performing Organization. Our AMC treaty laboratory participated in the fourth Organization for the Prohibition of Chemical Weapons (OPCW) sponsored Proficiency Test and achieved a perfect score.

No other laboratory in the world has achieved four consecutive perfect scores on these proficiency tests. As a result of achieving four consecutive perfect scores in proficiency tests, the OPCW included the AMC Treaty Laboratory as one of seven laboratories in the world selected for "designated" status. We maintain a continual state of readiness to respond to requirements for on-site sampling and analysis in support of the U.S. Treaty Compliance program.



Ensure Public and Workforce Safety and Protection of the Environment in Terms of the Storage Handling and Local Transport of the Nation's Chemical Stockpile

Safety is our main focus for the first goal. We continue to work to ensure that both the workforce and the communities surrounding the stockpile sites are safe. Being in charge of the Nation's Chemical Stockpile is an honor for the Command. We guarantee that the chemicals are stored safely until they can be demilitarized.

GOAL

Performance Measures - Demonstrating Progress Towards Our Goal

Number of rounds reconfigured each week

Our Anniston, AL stockpile operations site continues to reconfigure munitions each week. The reconfiguration process will allow the Program Manager Chemical Demilitarization (PMCD) to begin destroying the chemical agents safely.

Number of shipments of toxic material off-post and on-post

Our Technical Escort Unit (TEU) assisted in the shipment of toxic material on and off post to ensure public safety.

LOCATION	NUMBER OF SHIPMENTS IN FY98
Aberdeen Proving Ground, MD On-Post Shipment	112
Off-Post Shipment	21
Dugway Proving Ground, UT On-Post Shipment	4
Pine Bluff Arsenal, AR On-Post Shipment	1

In addition, we had 16 shipments of dilute agent, which did not require TEU assistance.

Number of outreach initiatives at each installation

We continue to work with the community through speaking engagements and tours of the stockpile sites. Our outreach initiatives are done in conjunction with PMCD. Two of eight chemical stockpile outreach offices responded with the type and number of outreach initiatives during FY98. The outreach initiatives for Edgewood and Newport are summarized below:

EVENTS	EDGEWOOD OUTREACH OFFICE	NEWPORT OUTREACH OFFICE
Fairs and Festivals	6	6 (1,137 total participants)
Media Contacts	22	44
Presentations	8	22 (1,049 total participants)
Tours	15	28 (865 total participants)

In addition, Newport had 11 public meetings with 164 participants and 5809 informational mailings.

Number of emergency response exercises conducted plus number of times participated in actual emergency response exercises

Exercises are conducted on a quarterly basis at each of the eight chemical stockpile sites. In FY98 we conducted 34 emergency response exercises (additional exercises took place at Deseret).

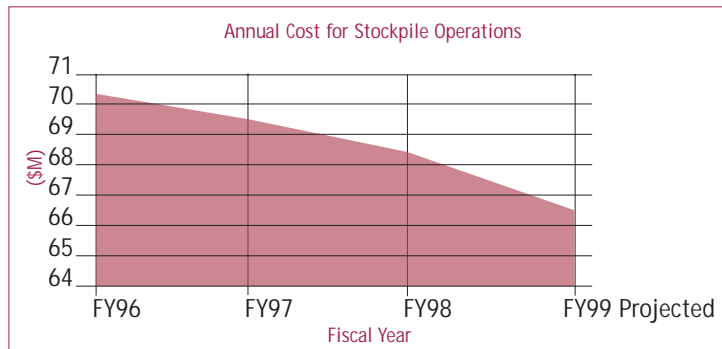
Number of actual and expected classes of accidents

During FY98 there were two accidents at the stockpile sites. Our expertise in chemical agents and current safety and emergency procedures minimized any injuries to personnel. A minor Sarin leak occurred at the Deseret site. As a precaution, the site was evacuated and officials sampled the blood of workers for possible exposure. Because Deseret runs emergency drills each quarter (in fact, one was run the previous day), this incident resulted in no casualties.

The second incident occurred at Pine Bluff Chemical Activity. During normal sampling activities of the one ton storage containers, three handlers experienced minor skin exposure from the mustard agent. Due to the

quick intervention of emergency response personnel, the three employees were treated at the activity health clinic and released. In both cases, the event was contained on Post.

Total annual cost for stockpile operations using FY96 as a baseline (% reduction)



We continue to reduce cost in our stockpile operations activities. Since FY96, we have reduced operations costs by approximately 1% per year through FY98. We project a 2.3% decrease in cost for FY99.

Performance Goals - Working Towards Our Strategies

Reconfigure the munitions to reduce the stockpile hazard and prepare munitions for transfer to PMCD

CBDCOM continues to partner with PMCD to ensure the chemical stockpile is destroyed within the timetable of the Chemical Weapons Convention (CWC) Treaty. In order to assist PMCD in the demilitarization operations, CBDCOM developed a plan to reconfigure munitions that would mitigate the risk of destroying the M55 rockets. CBDCOM continued to reconfigure munitions at the Anniston Army Depot. Additional stockpile sites will begin munition re-configuration when PMCD begins the demilitarization process. This will eliminate any unnecessary movement of the chemical munitions.

21

Ensure a capability to respond to any stockpile accident

We ensure our soldiers are trained and ready to respond to any emergency at the chemical stockpile sites. Readiness is sustained by conducting monthly Chemical Accident/Incident Response Assistance (CAIRA) exercises and quarterly training events with local government agencies at each site. The appropriate equipment is maintained at each site to respond to any stockpile related incidents.

Form a full partnership with PMCD to support demilitarization operations in both technology and public outreach

Although CBDCOM continued to work with PMCD throughout FY98, a formal Memorandum of Agreement (MOA) was not signed. Discussion between the two parties is ongoing to determine if a MOA is necessary to formalize the relationship.

Institute an improved system of public communication which will build public and workforce confidence in stockpile management

Community education focusing on the activities taking place at the stockpile sites is an important element of the Command's FY98 initiatives. Each site works within its own community to determine the best route to disseminate information to the public.

- > Umatilla's Commander meets at least once a month with all Public Affairs Office (PAO) personnel.
- > Pueblo PAO assets work together daily and continue to provide information to the schools and general public.

- > Anniston sponsors monthly outreach tours and open houses. A specialized outreach effort focusing on emergency response has been developed.
- > Deseret's Commander holds monthly meetings with Chemical Agents Munitions Disposal System (CAMDS), Tooele Chemical Disposal Facility (TOCDF) site managers, and public affairs personnel to plan public affairs strategy.

Reduce the resources for stockpile management by reengineering processes, outsourcing non-core functions and leveraging technology

The stockpile program will eventually dissolve as our nations chemical stockpile is destroyed. Due to tight budget constraints, the Director of Stockpile Operations group has worked to use fewer personnel and less funding through each year of the program. Team Pueblo has been very successful in partnering with state and local organizations. These efforts are brought to the attention of the other site Commanders during periodic Commanders' conferences. When appropriate, Team Pueblo's best practices are implemented by the other Site Commanders.

Develop risk management strategies for the stockpile program

Integrated Process Teams (IPT) have been implemented at two of the stockpile sites to develop risk reduction strategies. These sites laid out processes to evaluate compliance with each part of the environmental program and established reviews to monitor progress on a quarterly basis. The other six sites continue work to establish IPT teams. One of the stockpile Site Commanders attended CBDCOM's strategic planning off-site meeting to provide input into future planning activities for the stockpile sites.

All installations have worker input into risk management processes. In addition, there are hazardous analysis working groups in approximately half of the installations that are developing strategies to reduce potential accidents. Army Materiel Command (AMC) has authorized stand-down periods (a period of time when work is halted at the site) to identify potential safety issues and provide video and/or instructional training. Stand-down periods can occur several hours per quarter or periodically over a six-month period.

Ensure the Tech Escort Unit is trained and ready to meet mission demands for transport and shipment

The TEU has standard operating procedures (SOP) that govern the performance of peacetime escort missions. Escorts missions during crisis or wartime may require modifications to these procedures. Regulations outlined in the SOP applies to all TEU personnel who are involved in the planning and execution of escort missions and transportation of neat and dilute chemical agents or super toxic agents. The successful toxic shipments over the past year demonstrate that TEU has appropriate procedures and is trained to execute them.

Enhance the Federal, State and Local Agencies' Ability to Prepare for and Respond to CB Incidents

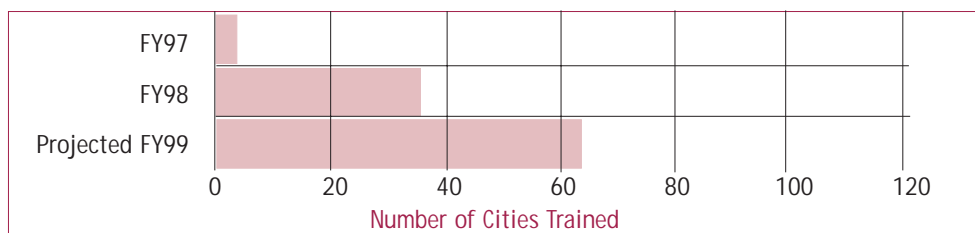
CBDCOM has expanded its role from a service response force to an organization that is known for its technical assistance to civilian agencies for responding to all CB incidents and terrorist events. We are the Department of Defense's technical expert for preparing the public's emergency responders for CB events and have developed teams that can respond to both CB terrorism and CB incidents/ accidents.

GOAL

Performance Measures - Demonstrating Progress Towards Our Goal

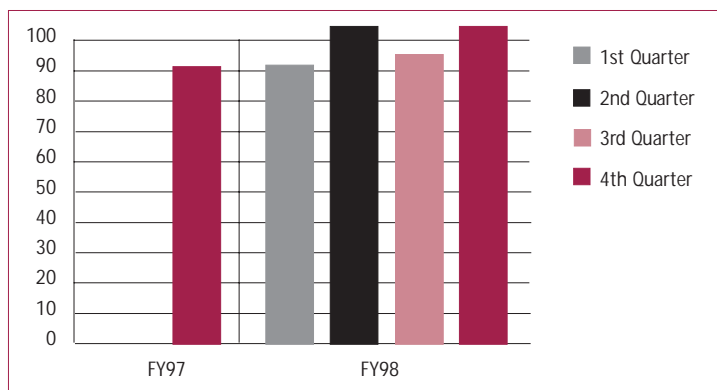
Number of cities trained and/or exercised by CBDCOM against target of 120 cities over three years

In FY98, 28 cities were trained by the Domestic Preparedness training team from CBDCOM. This brings the total number of cities trained by the end of FY98 to 32. We are 27% complete towards our goal of 120 cities.



Percentage of calls to the CBDCOM HelpLine closed each quarter

Our HelpLine team closed over 95% of the calls received each quarter. Some calls were received just prior to the quarter ending. These calls were closed at the beginning of the following quarter. Based on carry over from the previous quarter, the chart depicted below illustrates quarters having more than 100% of the calls closed.



Percentage of times that CBDCOM responds to Chemical/Biological (CB) incidents within the four-hour notification requirement

In FY98, CBDCOM responded to all CB incidents within the four-hour notification requirement.

Number of times that CBDCOM responds to an accident/incident involving military CB munitions

TEU RESPONSE TYPE	NUMBER
Incidents	106
Items Classification:	
Conventional Items	5,529
Improvised Explosive Device (IED) Response	2
Chem/Bio/Rad	0/11/1
N-Field Chemical Destruction*	36
Total Items	5579
*N-field chemical destruction relates to once inaccessible storage sites on Post.	

After action review assessment of the effectiveness of split-base operations

After action review assessments of split base operations are a normal function of the Stockpile Response Force (SRF) deployments. The after action assessments indicate that we are effective in conducting split base operations.

Number of Service Response Force Exercises conducted and summarized through lessons learned

One SRF exercise was conducted during FY98.

Performance Goals - Working Towards Our Strategies

Execute the CBDCOM role in the DoD DP program by training and exercising emergency responders

In response to Public Law (PL) 104-201 of the “National Defense Authorization Act for FY97,” a Domestic Preparedness (DP) program was developed to enhance the federal, state and local response capabilities to a terrorist incident involving weapons of mass destruction (WMD). Congress designated the Department of Defense (DoD) as the lead agency for carrying out the program. The DoD in turn designated the Commander, CBDCOM as the DoD Program Director for the DP program. Consistent with this directive, our second goal states that we will enhance the federal, state and local agencies ability to prepare for and respond to CB incidents. To achieve the objectives of goal two, CBDCOM developed the train-the-trainer concept to provide expert advice regarding emergency response to the use of WMD to federal, state and local emergency response personnel. Execution of the training will involve a five-year interagency exercise and preparedness testing program. The train-the-trainer process allows for city personnel to be trained as trainers thereby becoming force multipliers to pass the learned instruction to emergency responders in their own cities. Each city can then decide how the NBC information and training will be incorporated into internal instructional programs. In FY98, the following cities received train-the-trainer instruction:

New York, NY	10/11/97	Atlanta, GA	3/27/98
Los Angeles, CA	11/7/97	San Francisco, CA	4/2/98
San Antonio, TX	12/4/98	Portland, OR	4/9/98
Washington, DC	1/8/98	Jacksonville, FL	4/9/98
Memphis, TN	1/15/98	Phoenix, AZ	4/17/98
Kansas City, MO	1/23/98	San Diego	4/24/98
San Jose, CA	1/30/98	Columbus, OH	5/8/98
Honolulu, HI	2/5/98	Anchorage, AK	5/15/98
Indianapolis, IN	2/12/98	Denver, CO	6/4/98
Dallas, TX	2/20/98	Milwaukee, WI	7/23/98
Seattle, WA	2/26/98	New Orleans, LA	8/6/98
Baltimore, MD	3/12/98	Providence, RI	8/27/98
Miami, FL	3/12/98	Albuquerque, NM	9/3/98
Houston, TX	3/20/98	St. Louis, MO	9/24/98

The Command developed a comprehensive city visit process to familiarize and prepare federal, state and local officials for Domestic Preparedness training in their respective area. The city visit process includes the following events:

- > Regional Kickoff Meetings - The Regional Kickoff Meeting is conducted to familiarize key local and state personnel with a program overview, identify city and state points of contact, and to discuss available training dates. These meetings are conducted in a central location to coordinate the training process of two or more cities that are designated to receive training.
- > Initial City Visits - The initial city visit is the initial one-on-one contact with each city after the Regional Kickoff Meetings. The initial city visit provides more detailed information concerning the DP train-the-trainer program and is a coordination meeting used to establish training personnel numbers, location and specific requirements.
- > Senior Officials' Workshops - The Senior Officials' Workshops focus on senior level awareness issues and is designed to provide assistance to city officials in developing, modifying and integrating current city policies and plans to better prepare and respond to WMD terrorist incidents involving NBC materials. The Senior Officials' Workshop also provides a more detailed overview of the city DP training.

- > Training & Chemical Weapons (CW) Tabletop Exercises - The train-the-trainer portion of the DP program is a four-day training session with six different classes where a select number of the city's emergency responder trainers and local emergency officials receive classes on the NBC delta of a terrorist WMD event. The list of classes include: Responder Awareness; Responder Operations; Technician/HAZMAT; Incident Command; and Hospital Provider Technician/Emergency Medical Services. Once the four-day training is completed, the tabletop exercise takes place on the last day. The chemical weapons tabletop is a four to eight hour exercise designed to facilitate and focus the decision making process used by local authorities in their response and assessment of a terrorist release of a chemical agent. Two additional exercises are included in the DP training and exercise process approximately six months after the city training, CW Functional and Biological Weapons (BW) tabletop exercises. These advanced exercises provide a hands-on opportunity for the emergency responders to detect, decontaminate, and mitigate the results of a "simulated" terrorist incident. These exercises provide positive reinforcement of the information taught during the training.
- > Other aspects of the DP Program include: Federal, State and Local Exercise (FSL) - The Annual FSL exercises are designed to promote interaction among federal agencies and between the federal, state and local agencies and departments in response to a threat and/or actual WMD incident. During the 4QFY98, the DP program completed the planning and execution of Keystone 2-98, FY98 FSL for the year. The FY98 FSL comprised of two exercises with Keystone 1-98 held during 3QFY98 and Keystone 2-98 in 4QFY98. Keystone 1-98 focused on command and control issues specific to DoD. The exercise objectives address DoD response components; roles and responsibilities of the Reserve Component (RC); overall Federal response; and potential WMD threat scenarios. Keystone 2-98 focused on interactions between the federal, state and local agencies and departments. The three day event was held 15-17 September in Philadelphia, PA in conjunction with the CW functional exercise. These two events had extensive media coverage that resulted in approximately 40 local and national media contacts during the events. On average, five television, two radio and six print agencies covered these events.

Improved Response Program - The Improved Response Program is a set of individual technical investigations and exercises, which gather information to improve responder procedures to WMD incidents. Baltimore and New York are designated as the test bed cities for chemical and biological exercises respectively.

Quality is of the highest priority to the CBDCOM DP Management team, evident by their proactive efforts throughout the year. A major course block was modified in November of 1997. Two additional course block modifications occurred in FY98 based on agency partners, students, and instructor comments and recommendations. A validation process has been established for instructors of DP city training and Senior Officials' Workshops. The Senior Officials' Workshop instructor validation board approved six instructors in July and seven of 14 candidate instructors were approved in September as assistants. These individuals will be allowed to proceed through the rest of the DP validation process.

Since the start of DP training in Philadelphia, August 1997, 32 cities have received the DP train-the-trainer courses. Over 10,160 trainers have received training through the end of 4QFY98, with a cumulative total, combined attendance of over 20,300. These totals exclude Nashville training, which started in September and ended in 1QFY99. Those student attendance numbers will be applied to 1QFY99 totals.

Develop and test DP support components including CB Hotline, HelpLine and personal protective equipment testing protocol

The Domestic Preparedness CB HelpLine has received a total of 1,249 phone calls since its inception 1 August 1997 to 31 September 1998. The HelpLine is a toll-free service designed to provide the nonmilitary, emergency responder community with information on CB issues in conjunction with the DP Program. The term "Emergency Responders" includes firefighters, law enforcement officials, emergency medical personnel, hospital providers and emergency management officials. Topics within the scope of the CB HelpLine include: characterization of chemical agents; control of chemical agents; military and nonmilitary defense equipment; mitigation techniques; and information on federal assets available to assist domestic civilian authorities in the event of a WMD terrorist incident.

The primary mission of the HelpLine is to provide accurate and timely information to all customers in a professional courteous manner. When a call comes into the HelpLine, the operator will conduct an initial screening to determine the nature of the call. The operator will emphasize that the HelpLine is reserved for verified members of the emergency responder community. If the caller's identity cannot be verified, information will not be provided. If the call is legitimate, the operator follows an established SOP. For instance, if the question is within the scope of the CB information line and the question/service is within the scope of the HelpLine Staff, the request is either answered immediately or deferred for research. Those requests deferred for research necessitate operator response to the caller within 24 hours with the answer or an estimate of when the answer will be available.

The Engineering Directorate completed testing on Level A ensembles and forwarded the data to the HelpLine. The Program Director Domestic Preparedness and Director of Risk Management are working together to ensure subject materials for training and testing/evaluation of equipment are of the highest quality and in compliance with all safety standards. Improved Response Program exercises provide a real time opportunity for the assessment of personal protective equipment (PPE) equipment specifications and requirements to operate in a CB environment.

27

Develop a public affairs program that explains CBDCOM's role and responsibility in DP and supports active participation in CB response

The potential threat of domestic terrorist incidents involving the use of WMD has heightened additional awareness. Such heightened awareness required a public information strategy by the Command for the release of information regarding the Domestic Preparedness program. CBDCOM PAO ensured that the program would be communicated accurately and cities being trained would benefit from media coverage. The media strategy began by inviting the city to host a press conference and recommending city officials, such as: the mayor, police chief, fire chief, Office of Emergency Management or leaders in response, other federal agencies and the CBDCOM spokesperson. Out of the 28 cities trained, 18 invited media for press conferences and photo opportunities. Media coverage provides an educational medium, which allows the cities to demonstrate to the public that every effort is made to prepare local emergency responders for CB incidents and ultimately protect the community. The CBDCOM PAO recommended city displays using their existing equipment and capabilities for media. Media were invited to film one of the several visual trainer demonstrations available during the EMS medical triage exercise and HAZMAT identification and detection exercise.

This resulted in cities, that chose to have media coverage, had on average four television, two radio and two print entities covering the event. Approximately 80 local media contacts were established for the training program during FY98. The following national and international media agencies made reference to the training program during the course of FY98: ABC World News Tonight; National Public Radio; the History Channel; "The News Hour with Jim Lehrer;" the British Broadcasting Corporation; the Canadian Broadcasting Corporation; Christian Broadcast Network; and *George Magazine*.

To effectively communicate the objectives of the Domestic Preparedness program, press packets were created and distributed to all media and observers who attend a DP related event. This information provides background on the program so the media can report related stories accurately. The press packets contain six informational fact sheets.

- > Domestic Preparedness Training Program - provides an overview of the program including logistics and the various federal agencies involved in training city emergency responders. This fact sheet also details the course objectives offered by the program.
- > 120 Cities - lists the roster of cities that have or will receive Domestic Preparedness training.
- > U.S. Army Chemical and Biological Defense Command - describes the history of the Command and how it supports the Army in three main areas: research, development and acquisitions; emergency preparedness and response; and safe, secure chemical weapons storage, remediation and demilitarization.
- > Chemical/Biological-Rapid Response Team (CB-RRT) - discusses the legislation that created the C/B-RRT, and how this team enhances the capability of the federal government to prevent or respond to a CB terrorist incident.
- > Technical Escort Unit - describes how the U.S. Army's TEU provides the DoD and other federal agencies with a unique, immediate response capability for CB warfare material.
- > Chemical and Biological HelpLine - describes how the HelpLine offers technical assistance in non-emergency cases to local and state emergency responders.

Informational brochures developed to explain various aspects of the Domestic Preparedness program are distributed during city training and exercises, and national conferences. During FY98, the Domestic Preparedness program attended four national conferences that focused on enhancing the capabilities of fire and HAZMAT response personnel. The conferences proved to be an effective way for the Domestic Preparedness program to communicate its goals and missions to a targeted audience. The following brochures were developed during FY98:

- > Hospital Provider Train-the-Trainer Course - describes all aspects of this Domestic Preparedness training course. Upon completion of this course, participants will have firm knowledge of the health effects of CB agent exposure.
- > Train-the-Trainer - briefly describes each of the six training classes offered by the Domestic Preparedness program. This brochure also highlights course objectives, pre-requisites and instructors.
- > Chemical and Biological HelpLine - describes who is eligible to use the CB HelpLine, as well as what information is available to callers.

Conduct annual CB terrorism response exercise to include the CB/RRT

The Command has developed a roster of CBDCOM elements tasked to assist in responding to national and international CB terrorist incidents. The CB/RRT concept has been finalized and CBDCOM is designated as a DoD response element. The CBDCOM Technical Escort Unit (TEU) responded to 106 accident and/or incidents involving CB munitions during FY98. To ensure readiness, exercise scenarios have been developed and incorporated into annual exercises.

PAO developed a brochure to communicate the role of the new team to gain visibility and promote understanding.

The Risk Management Directorate developed an interactive training CD-ROM called: "Hazard Recognition and Patient Care Training." This application targets workers at chemical depots and features video, pictorial,

verbal and audio instruction on proper medical and emergency response techniques for initial responders. Interactive scenarios challenge the student's ability to diagnose and treat victims of traumatic and chemical agent incidents, thus increasing our response readiness to respond to a CB incident.

Prepare a contingency plan for emergency and CB accidents/incidents involving military CB munitions

An executable SRF plan to deploy, control, and safely defuse chemical munitions found outside of U.S. chemical stockpiles has been developed and is reviewed/updated periodically. In addition, a list of CB experts for recall and deployment are maintained for the SRF team. These rosters are constantly updated to ensure the SRF has all the resources to respond properly to an incident.

Conduct exercises to ensure readiness and competency of the Service Response Force

One SRF exercise was conducted in May of 1998 at Umatilla Chemical Depot, OR. The after-action assessment revealed that split-base operations are a cost-effective, timely, and an appropriate means of responding to chemical events that warrant a chemical service response force.

Lessons Learned:

1. The Initial Response Force (IRF) planned effectively for the arrival of the SRF staff.
2. The transition process from IRF to SRF was excellent.
3. Service Response Force advance party requires additional travel time to chemical depots in AMC.
4. Response resources from other chemical sites requires a balancing of assets to maintain operations.
5. The SRF Commander recognized the need to assemble representatives from all federal, state and county agencies having an interest in re-entry and restoration issues in one place, to plan and to resolve problems.
6. Many participants in the exercise appeared to have differing interpretations of how the Stafford Act and the Federal Response Plan (FRP) would affect responding organizations.

We addressed all lessons learned in subsequent planning efforts. The role of the risk management staff in the SRF is firmly established. The AMC plan for the SRF clearly defines the responsibilities of risk management.

Establish effective split-based operations for the CB response forces

Efforts are ongoing to refine and complete the split-based operations plan. A key element of split-base operations is to have computer hookups that allow instantaneous total operations. Four sites now have connectivity over the wide area network (WAN). The Emergency Operations Center (EOC) continues to maintain a roster of experts in CB and conducts split-based operations exercises as part of its normal function.

Execute Remediation
and Restoration of
RMA ROD by 2006;
Conduct all Other
BRAC-Related
Environmental and
Remediation
Activities to Ensure
Closure of All
Installations at End
of Demilitarization

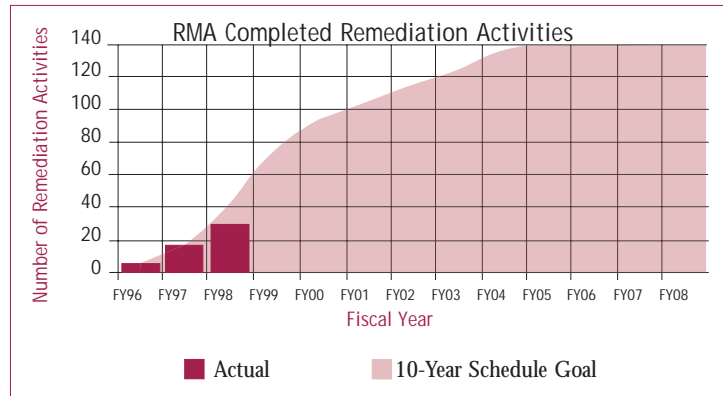
This goal reflects our efforts to hand the installation keys over at the end of demilitarization. Remediation and environmental cleanup will be completed on schedule, irrespective of funding limitations.

ENVIRONMENTAL
GOAL

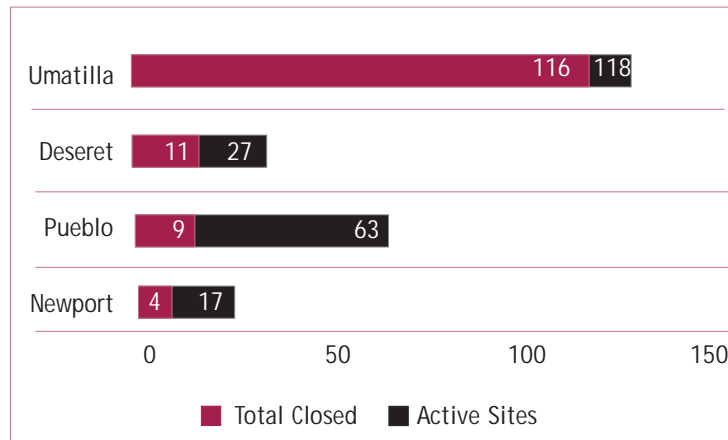
Performance Measures - Demonstrating Progress Towards Our Goal

Percentage of the Record of Decision (ROD) annual requirements completed at Rocky Mountain Arsenal (RMA) as scheduled in accordance with the final detailed analysis of alternatives report and against 2006 goal

We are working towards our 10 year goal of completing the ROD requirements at RMA. By the end of FY98, our team was 22 percent of the way towards our final goal. Cooperation between local officials and CBD COM is critical to eliminate any unnecessary delays.



Percentage completion of program funded and unfunded environmental programs



CBD COM continues its remediation efforts at several depots. Umatilla's environmental programs are 98% complete. As we complete our efforts at Umatilla, we will focus our attention on Deseret (41% complete), Newport (22% complete) and Pueblo (14% complete).

Performance Goals - Working Towards Our Strategies

Ensure CBDCOM restoration/remediation requirements are documented and funding requested

Fiscal cuts in storage site funding has forced CBDCOM to develop innovative cost cutting strategies that do not compromise acceptable safety and security measures at each site. Strategies focus on completing remediation and environmental cleanup requirements on schedule, irrespective of funding limitations. These strategies include: process re-engineering; forming partnerships to share resources; and communication of effective cost cutting measures across all storage sites. Each installation is mandated to work closely with industry, local, state, and federal regulatory agencies to maximize usage of existing resources.

We completed documentation of restoration/remediation requirements and funding requests for each facility. All installations will be closed with final decision authority resting with Congress. The Army Corps of Engineers in conjunction with the local reuse committees will determine any future installation activity. Pueblo and Umatilla are on the Base Realignment and Closure (BRAC) list and efforts continue to place Newport on a future BRAC list. Pueblo has no future mission beyond storage and established Deseret remediation plans assume the installation will be closed.

Form partnership with PM non-stockpile to enhance relationship in handling recovered munitions

During FY98, we formed a partnership with PM Non-Stockpile to cost effectively handle recovered munitions. Together we participated in the drafting of the Department of the Army (DA) policy manual that outlines the roles and responsibilities of each partner in the handling of recovered munitions. The DA policy manual provides the framework/guidelines for finding, characterizing (conventional vs. chem-bio), and transporting the material to either temporary storage or emergency disposal facilities. Specific guidelines define the interface between CBDCOM and PM Non-Stockpile resources for transportation and facility considerations.

Have each installation develop an aggressive plan to overcome funding challenges and ensure schedule

A key component of our cost reduction strategy is to communicate to all sites activities that overcome funding challenges and ensure schedule adherence. Newport developed a cost effective work schedule for cleanup and suspense dates for completion. Recognizing the efficiency and proactive stance of Newport's work plan, Deseret has since incorporated these attributes into their own plans. Newport has also developed completion of work funding requirements in partnership with Anniston. Deseret is working with CBDCOM to develop remediation budget requirements for the out years.

Rocky Mountain Arsenal met the challenge of fiscal cuts by accelerating cleanup efforts mandated by the Record of Decision from 14 to ten years. PM RMA has developed an aggressive plan to ensure scheduled milestones are consistently achieved. During FY98, RMA completed (22%) percent of the ROD annual requirements as scheduled in accordance with the final detailed analysis of alternatives report and against the FY2006 goal. Schedule milestones for the design and construction of the RMA Hazardous Waste Landfill were achieved during the fiscal year. Design began in March 1996 by the U.S. Army Corps of Engineers (USACE). Final design was approved by the agencies on February 13, 1998, and issued for construction by the USACE during February 1998. The test fill report, compatibility test report, interface shear testing report, in support of the hazardous waste landfill design, have been approved by the agencies. The designs for the landfill wastewater treatment facility and influent/effluent basin were approved by the agencies on schedule during the 2nd quarter, FY98.

Provide incentives for industrial partners to do things a cost effectively as possible to overcome funding limitations

We incorporated incentives and developed relationships with industry and other government agencies to promote execution of ROD by 2006 in the midst of funding limitations. PM RMA resolved Program

Management Contract (PMC) protests and negotiated a PMC incentive plan with contractors on schedule. We developed team relationships with PMC, industry, U.S. Fish and Wildlife Service, DoD, local, state, and federal agencies through Remediation Venture Office (RVO) team building sessions. The RVO has been holding team-building sessions with the regulatory agencies every six to nine months. The last session was held in May 1998. These sessions, along with increased communication on a day to day basis, have resulted in working relationships that are at an all-time high for the RMA program. Now that PMC has representation on the board, key PMC personnel will be incorporated in the next team-building session.

Create an innovative partnering arrangement with industry and local, state and federal regulatory agencies to overcome funding limitations

We have made great progress against each key performance metrics: safety, schedule and cost. The RVO and PMC have worked together to build a strong safety culture with a goal of “zero incident performance.” Performance to date has been excellent with an Occupational Safety and Health (OSHA) recordable incident rate (RIR) of 1.03 and a lost/reduced-time incident rate (LTIR) of 0.21. These rates are well below the construction industry averages of 9.9 for RIR and 4.5 for LTIR and below the RMA 1998 goals of 2.4 and 1.4, respectively. Progress has been made against the baseline Remediation Design and Implementation Schedule (RDIS), as noted by the percentage of ROD annual requirements completed by RMA during FY98.

A cost tracking system has been established for the RVO and PMC. Cost performance remains consistent with overall baseline estimates with some projects completed slightly above baseline estimates and other below. Reports are provided on a monthly basis and project reviews are held bimonthly. Also, during FY98, the RVO established the Cost/Productivity Improvement Program (CPIP) which is intended to emphasize and report cost savings improvements made by the RVO/PMC.

Develop cleanup standards for chemical agents to reduce long term remediation costs to the Command

With cost constraints driving innovation, it is imperative that we develop cleanup standards for chemical agents to reduce long term remediation costs to the Command. Our Director of Risk Management continues to participate as co-chair on the Committee for Standards Workgroup to establish required standards. This group has developed a proposal to establish risk based cleanup standards to be briefed to the Full Steering Committee November 4, 1998. In partnership with the National Regulatory Council (NRC), final reference doses for installation hand-off was established during FY98. The CBDCOM provided chemical expertise to the Munitions Rule Implementation Council (MRIC) tasked with completing the DoD implementation policy for munitions.

Research, Develop, Acquire, and Field NBC Defense, Smoke and Obscurant Materiel that Meets Warfighter Requirements and Reduces Acquisition Costs and Timelines (i.e., Produce Products Faster and with Lower Life Cycle Costs)

Goal four speaks to our greatest strengths: innovation, customer satisfaction, and expertise in NBC equipment survivability. As with stockpile and remediation, cost constraints demand innovation in research, development, acquisition, and fielding of NBC defense, smoke and obscurant materiel which meet or exceed warfighter requirements. Our customers demand accelerated product production with lower life cycle costs. In order to reduce the burden NBC equipment places on the military logistics system, it is essential to adopt a cradle-to-grave maintenance sensitive philosophy. As the experts in NBC defense, we can champion this thought process by providing the Services with the necessary research and technology to incorporate NBC survivability features into military equipment during the whole production process.

GOAL

Performance Measures - Demonstrating Progress Towards Our Goal

Ratings from internal technical reviews on whether projects are within budget and meet exit criteria requirements

We did not establish a rating system based on meeting cost and exit criteria requirements in FY98. We expect to work toward this performance measure in our FY99 Performance Plan.

Ratings from customer satisfaction in key performance areas

Our customer satisfaction scores in meeting budgets, requirements and timelines decreased slightly in FY98. Statistical analysis on the data found that the score slippage was not statistically significant. Even though statistically the scores remained about the same from FY97 to FY98, we are not satisfied. We will continue to ensure that we produce products faster and with lower life cycle costs. We want to ensure we exceed our customers expectations.



Percentage of NBC systems that meet NBC survivability requirements when an items is Type Classified (TC) - 100% goal

During FY98, 100 % of our new NBC systems met stringent NBC survivability requirements when type classified (Milestone III).

Item Type Classified	Meets NBC Survivability Requirements
M93A1 Fox TC Standard	✓
Light Vehicle Obscuration Screen System (LVOSS)	✓
M304 Grenade Launcher Installation Kit (1-M7 Light Vehicle)	✓
M305 Grenade Launcher Installation Kit (4-M7 Light Vehicle)	✓
M310 Grenade Launcher Installation Kit (4-M7 HMMWV)	✓
M90 Grenade Launcher (M7 Grenade Discharger)	✓

Percentage of nonexempt acquisitions receiving waivers from performance specifications

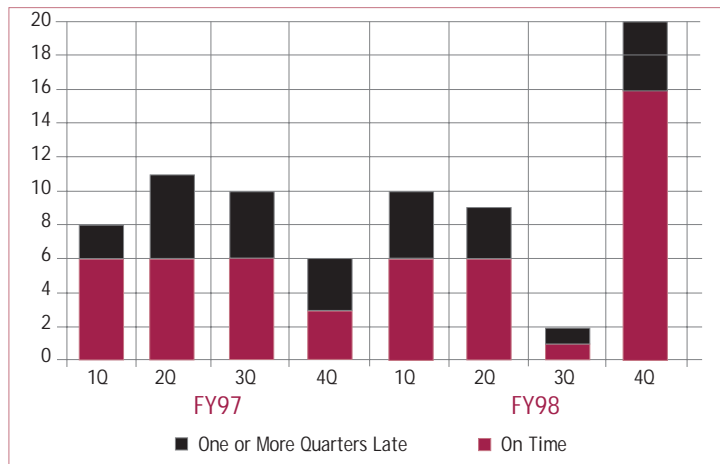
No waivers were given in FY98 from performance specifications. Only one waiver was given in FY97 and in FY96.

Percentage of CBDCOM science and technology (S&T) programs transitioning to joint service and Army development programs with user validation through modeling, wargames, etc.

Two science and technology programs transition to development using user validation. The Joint Service Mask transitioned in the 4Q FY98 using modeling. The Enhanced Respiratory Filtration Technology also included user validation prior to transitioning to development.

Acquisition milestone tracking

In FY98, the Command completed 29 milestones on time. We were able to exceed last year's 21 milestone accomplishments by 28%. We achieved 71% of the total milestones tracked for FY98 with (73%) of the milestones completed within one quarter of the due date.



Performance Goals - Working Towards Our Strategies

Execute Joint Service RDA Plan for NBC Defense equipment and Army RDA Plan for Smoke and Obscurant Materiel

Below is an update of the major milestones in the RDA Plan that the Command has worked hard towards in FY98

Director Research and Technology

- > A field demonstration of millimeter wave obscurants was held at Eglin AFB, FL in July 1998, the culmination of a four-year effort under STO III.K.04. An instrumentation radar, which was modified to simulate a tactical fire control radar, acted as the threat sensor. Preliminary results indicate that these materials can enhance the capability of tactical vehicles to avoid targeting and acquisition by millimeter wave threat sensors.
- > A new cutter design for dissemination of millimeter waves obscurant smoke was conceived in response to clogging problems observed with the present cutter. A brassboard was fabricated and showcased at the annual Smoke Symposium held in April 1998.
- > In evaluating the feasibility of a laser standoff chemical detection technology, the following was accomplished:
 - Laser Standoff Chemical Detection technology has not only been deemed feasible, but is being aggressively developed. The 1998 Technical Area Review and Assessment (TARA) panel gave this DTO the highest ("green") rating in all categories - budget, schedule, technical performance, and overall assessment - with the comment "Program is on track." This is indicative of significant improvement, given the yellow rating the DTO received in 1997.
 - Phenomenology experiments in various environments have been performed with an existing state-of-the-art laser-based Light Detection And Ranging (LIDAR) system. These 6.2 level studies have defined critical parameters, such as atmospheric backscatter coefficients, which support advanced algorithm development and the design of a 6.3 level advanced LIDAR system scheduled for completion in FY00. This LIDAR will have enhanced detection capabilities, such as longer range (up to 20 km) and detection of aerosols/rains in addition to vapors, for the application of fixed site protection.

- A highly successful demonstration was performed with the existing LIDAR to evaluate the applicability of laser standoff chemical detection technology to the large area decontamination application. Specifically, the LIDAR was used to perform first-time prediction of surface contamination down to the 1g/m² level by detecting and mapping in real time the fallout from a simulated airburst attack. Now that this mode of detection is shown to be feasible, this capability should be developed for lower limits of detection and integrated into the 6.3 LIDAR.
 - Preliminary screening has been completed of novel adsorbent technologies for the three primary filter applications being addressed by the DTO. For potential Joint Service General Purpose Mask (JSGPM) filter application, a layered bed approach consisting of granular ASZM-TEDA carbon followed by impregnated-activated carbon cloth has been shown to exhibit enhanced sorption of chemical agent vapor. For noncombustible collective protection filter applications, adsorbent materials consisting of impregnated metal oxide (titania or alumina) composited with high silica zeolite (ZSM-5) have been found to exhibit promising agent filtration performance. For regenerative filtration applications, beds consisting of layered adsorbent materials have been found to provide enhanced filtration performance over beds consisting of a single adsorbent material. The adsorbent materials are layered such that the pore size of the adsorbent materials decreases from the inlet (feed flow direction) to the exit of the bed. More in-depth evaluation of these adsorbent technologies will be undertaken during FY99.
- > Successfully demonstrated second generation prototypes of Tier I/Tier II Biological Aerosol Warning System (BAWS) at Joint Field Trial-4 in 1QFY98 at Dugway Proving Ground, Utah. Fifteen Tier I units and three Tier II units were evaluated.
- > The following demonstrates the effectiveness of enzymatic G-agent decontamination:
- The first large-scale agent trials of an enzyme-based decontaminant were held at the Centre d'Etudes du Bouchet (CEB) Test Facility, Cazaux, France, under the auspices of NATO Project Group 31 (PG.31; Dr. J. DeFrank, Chairman), in Oct 97. In the two trials with a bacterial G-agent enzyme developed at ERDEC, greater than 99% decontamination of GD was achieved in 15-30 minutes. The enzymes were used in solutions of fire-fighting materials and applied as a spray without any scrubbing.
 - Enzymes for G- and V-agents were included in chamber scale panel tests scheduled for September 1998 at Dugway Proving Ground. The enzymes, and a reactive polymer with potential for enhancing HD hydrolysis, were incorporated into a solution with commercial laundry detergent and applied by spraying. The enzyme-based materials were compared to DS2, HTH, BX-24 and laundry detergent alone.
 - NATO PG.31 held a second round of agent trials at Cazaux in September 1998. Two G-agent enzymes (a recombinant squid enzyme from Germany and the U.S. bacterial enzyme) were tested. Both achieved greater than 99% decontamination of GD in less than 15 minutes. A demonstration of this technology was provided for representatives of 10 nations and higher level NATO groups. At the following meeting of NATO Land Group 7, Turkey and Italy requested membership in PG.31 (to join France, Germany, the United Kingdom, and the United States).
- > Defense Technology Objective (DTO) CB.16.12, Enhanced Respiratory Filtration Technology, has been completed and demonstrated a filtration technology capable of meeting the stringent requirements of the JSGPM. Follow-on evaluations of best candidate air filtration technologies were completed in March 1998. Gas-life performance and airflow resistance of the bonded carbon sorbent were characterized to determine optimum TEDA content, bed thickness, and polymer binder content. Aerosol penetration, oil aerosol loading, and airflow resistance tests were conducted on candidate electrostatic particulate media and

the best candidate was selected based on the results. Performance curves were generated and used to finalize the design and predict the overall performance of the baseline filter concept developed in-house for the JSGPM. Data from simple structures (i.e., test discs) were favorable and demonstrated the feasibility of transitioning the technologies to the more complex contoured geometry of the baseline JSGPM filter concept. Attempts to fabricate good quality carbon filter elements based on this design were unsuccessful. In September 1998, prototypes of an alternate JSGPM filter concept based on a simpler commercial design were fabricated and evaluated. Results were highly favorable. The alternate filter concept was shown to be capable of meeting C2A1 canister filtration requirements while offering a 40% reduction in airflow resistance and a 33% reduction in overall profile. Additional tech base work is planned in FY99 to revise the baseline filter design, enhance airflow resistance, gas-life performance, and demonstrate the technology in a more complex shape compatible with the JSGPM design concept.

Program Manager for NBC Defense

- > The GID-3 Automatic Chemical Agent Detector/Alarm (ACADA) was fielded to the U.S. Army. It will be fielded first quarter of FY99 to the Air Force.
- > Full rate production of the Improved Chemical Agent Monitor (ICAM) was completed, in addition to the first article test.
- > We entered full rate production for the AN/URD Pocket Radiac and expect to field the system during the second quarter of FY99.
- > The Multipurpose Integrated Chemical Agent Detector (MICAD) was integrated into the Fox Block I modification. It is expected to be Type Classified in FY99.
- > We continued our support of the U.S. Marine Corps (USMC) Lightweight NBC Reconnaissance System (LNBC RS) development. We provided support for the evaluation of the Phase II contract proposals to support the USMC Joint Service Warning and Reporting Network (JWARN) program.
- > We initiated production validation testing for the Fox block I modification
- > CBDCOM supported the U.S. Air Force Joint Chemical Agent Detector (JCAD) program by assisting in the evaluation of contract proposals, supporting the award of two competing contracts and supporting the running of the Preliminary Design Review.
- > The M45 Aircrew Mask will be fielded in the first quarter of FY99.
- > The preliminary design review for the Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD) was delayed until the first quarter of FY99.

Program Manager for Smoke and Obscurant Materiel

- > CBDCOM achieved First Unit Equipped on several items. The M58 was fielded to Training and Doctrine Command (TRADOC) and Forces Command (FORSCOM). The M56 was fielded to FORSCOM
- > The contract package for the production of the Light Vehicle Obscuration Screening System (LVOSS) to procurement was completed. In addition, the production verification test was also completed.
- > Successfully entered into a foreign comparative test program with the UK for the XL96 and 97 Riot Control Grenades. These 66mm grenades will be compatible with the LVOSS system.
- > The LVOSS team is working with the Program Manager for Non-Lethal Technologies on developing a non-lethal crowd control 66mm grenade for the LVOSS. Potential material solutions for this need are a "flash-bang" grenade or a "blunt-trauma" grenade.

Program Director for Biological Defense

- > The Type Classification of the Biological Integrated Detection System (BIDS) Pre-Planned Product Improvement (P3I) was delayed 60 days until the results were obtained from the Operational Evaluation Command (OEC). The BIDS was Type Classified 1st Quarter FY99.
- > The contractor logistics support for the long range-nondevelopmental item was completed in FY98. One prototype for Engineering Developmental Testing (EDT) was completed. The developmental testing and operational testing for the Long Range-Biological Standoff Detection System (LR-BSDS) was postponed one year.

Director of Engineering

- > Operational and chemical agent testing for the M34 Soil Sampling Kit reconfiguration was successfully completed. The adoption package will be completed in 3QFY99.
- > An engineering study was completed for the M18A3 Detector Kit. First buy is scheduled for 2QFY99.
- > Developmental and operational testing of the M295 Individual Equipment Decontamination Kit Trainer was accomplished as scheduled. The effort is planned for completion in 3QFY99. The cost of the trainer will be 50% less than that of the M295 kit.
- > The Modular Decontamination System Program successfully completed developmental and operational testing. It is expected to type classify the system in 1QFY99.
- > The Sorbent Decontamination System Program identified two candidates to replace the expensive materiel currently used in the M295 Equipment Decontamination Kit. Cost of the present materiel is \$80/pound while costs of the replacement materials is in the order of \$12/pound. Early testing is promising and it is expected to incorporate the new materials via Materiel Changes in FY99. This change will reduce the life cycle costs of the M295 Kit.
- > The pre-production qualification testing for the Advanced Integrated Collective Protection System (AICPS) was scheduled for FY98. The contract was ended using the "limitations of cost clause". The development will be completed in-house. Type classification is expected early FY00.
- > A single year contract with a five year option was awarded to TSI Inc. for the M41 Protection Assessment Test System (PATS). Delivery of the PATS under a previous contract remains ahead of schedule.
- > New Materiel Release for the M48/49 Aviator's Masks has been postponed due to a delay in the production of a sub-component part used in the hose assembly and issues relating to NBC survivability of the lightweight motor blower assembly.

Reduce logistics costs of NBC Defense Equipment (e.g., less maintenance, longer shelf life, and fewer moving parts)

The Command is dedicated to reducing logistics costs of NBC defense and smoke and obscurant equipment culminating in less maintenance support, longer shelf life, and fewer moving parts. As a result of their excellent modernization through spares effort, the M152A2 Team was the Army recipient of the OSD Lifecycle Cost Reduction Award. Our commitment to this area is best demonstrated by the M157A2 Smoke Generator Set (SGS). The SGS program team was selected as the U.S. Army recipient of the 1998 Department of Defense Logistics Life Cycle Reduction Award. Dr. Gansler, Under Secretary for Acquisition and Technology (A&T), presented the award to the M157A2 team during the 1998 Logistics Reform Focus Day on October 1, 1998. The M157A2 Integrated Product Team (IPT) eliminated the reliance on Motor Gasoline (MOGAS) in compliance with DoD Directive 4140.43 on fuel standardization and eliminated over 142 sole source parts while efficiently addressing significant safety and operational deficiencies through a full scale material change program. By employing acquisition reform strategies such as modernization through spares, partnering, and technology insertion, the M157A2 team achieved a life cycle cost reduction of over \$10 million with an investment of less than \$400K.

PM NBC Defense Systems pursued efforts to lower the cost of system ownership including costs associated with operating, modifying, maintaining, supplying and disposing of weapon/material systems. Total ownership costs are influenced during system design functions as well as through system modifications and upgrades. After examining the top 10 cost drivers on our systems, plans were developed that could reduce life cycle costs for systems offering a promising return on investment. The following programs are either in development or being implemented to reduce life cycle costs: the Lightweight Voice Amplifier, the Chemical Agent Monitor Sieve Breather and Pump Sieve improvement program, and the NRC exemption license and battery life extension program for the Automatic Chemical Agent Alarm. Fielding of the upgraded M93A1 FOX will result in lowering the operating and support costs for five of the top ten cost drivers. Life cycle cost reduction programs at PMNBC Defense Systems continually yields significant cost reductions.

Integrate and leverage modeling and simulation tools into each product's acquisition process

Efforts continued during FY98 to integrate modeling and simulation tools into the acquisition process for each product. Technological innovation and pure persistence have allowed the Command to achieve most milestones outlined in the performance plan. The Biological Aerosol Warning System (BAWS) has completed Phase I and II of the array optimization and validation studies and finalized the Battle Lab Warfighting Experiment (BLWE). BLWE will have a combination of simulated and actual BAWS/PAWS hardware with soldier-in-loop operation. Initial exercises are scheduled for Fort Leonard Wood in January 1999 and a final exercise will be conducted at Dugway Proving Ground in May 1999.

Initial phases of the LR-BSDS tactical employment studies were completed during June 1998 and the final phase is scheduled for completion in August 1999. The LRBSDS simulation elements successfully demonstrated the CB Distributed Interactive Simulation (DIS) capabilities over the Distributed Simulation Internet (DSI) between Fort Rucker, AL and APG, MD in July 1998. Attainment of these objectives occurred within proscribed timelines as published in the Command FY98 Performance plan.

41

Develop maintenance free detection material (that which requires preventive maintenance checks and services only)

Maintenance is one component of the production process, which requires Command wide attention. Without rethinking maintenance concepts across the board, acquisition and life cycle costs will remain static. The CBDCOM is committed to developing a maintenance concept devoid of depot or contractor support to the extent they exist today. We believe the concept of reduced maintenance is an integral part of the production process and methodologies focused on reducing maintenance requirements should be championed. Command efforts to search for and apply technologies that reduce the operational and maintenance costs for NBC detectors are ongoing. We seek to develop a chemical agent detector that requires only preventative maintenance checks and services. We expect to have a concept in five years and brass board in seven years.

Maintain a viable NBC industrial base strategy to reduce equipment costs, increase sustainment and enhance reconstitution capabilities

The CBDCOM Industrial Base Advocate and the Joint Service Materiel Group Process Manager for Industrial Base co-chaired a Joint Service NBC Defense Integrated Product Team (IPT). The IPT focused on industrial base issues for the Joint Services and assisting the services with the implementation of the Joint Service Industrial Base Management Plan.

An Industrial Base Sector Study was conducted for the chemical defense and smoke/obscurant areas as a response to the Chief of Staff of the Army (CSA) request to update the FY94 Industrial Base Sector Study. This study included an overview and trend analysis of the key contractors, an assessment of the technologies and industrial base required to support the Army After Next, a study of selected secondary items to assess War

Reserves and the current CINC's OPLAN shortfalls, and plans and recommendations for developing the future Industrial Base Management Plan.

Evaluate science and technology programs through live (warfighters), constructed (wargaming) or virtual (distributed interactive simulation) means

Product user requirements are an integral part of the dialogue between the Command product development teams and our customers. We are constantly striving to enhance our understanding of customer requirements by developing and implementing methodologies with customers to determine which form of user evaluation techniques are appropriate for each planned transition to development. The following list provides the user evaluation options available to our customers: Battlelabs, Warfighter Seminars, Army Warfighting Experiments, Advanced Technology Demonstrations (ATDs), Advanced Concept Technology Demonstrations (ACTDs), and Concept Exploration Programs. During FY98, a biological detection ATD was used to develop requirements and act as a test bed for the BAWS. Consequently, 20 - Tier I and 3 - Tier II BAWS units were downsized and integrated for testing at the Joint Field Trial IV, October 6, to November 6, 1997 at Dugway Proving Ground, UT.

Execute the performance and standards implementation plan

A plan to address contracts using performance specifications and standards rather than military specifications was very successful. All nonexempt acquisitions used performance specifications in FY98.

Accommodate end-user requirements through customer communications and the materiel change process

Customers were audited in FY98 through our annual survey process. Each directorate and program manager developed a customer list to send our surveys. We completed the customer satisfaction survey and compared the data with past results. Customer satisfaction is rated on a scale of one to four with one being very dissatisfied and four very satisfied. Overall, our rating for FY98 remained at 3.5, which indicates our customers were satisfied with our services.

The Command experienced an increase or remained consistent in customer satisfaction in the following areas: accessibility, communication, follow-up support, customer understanding, responsiveness and delivering on time. Responsiveness and delivering on time were two of the top five parameters most important to our customers. Areas where our customer satisfaction decreased included: courtesy, within budget, teaming with the customer, credibility, competence of personnel, and meeting requirements. Of the six listed, credibility, competence of personnel and responsivity were rated most important by the customer.

During FY97, the customer survey told us we needed to work on delivering products on time because this parameter was extremely important to our customers. Initiatives began during FY98 to address this issue. Ratings from this year's survey support our efforts and validate our commitment to delivering quality products consistent with our customer needs.

The original surveys were given back to each directorate and program manager so they could correct any issues, which the customer may have noted. Also, this allows the business areas to develop future strategies to improve customer satisfaction.

Become the Organization of Choice for Chemical, Biological, and Smoke/Obscurant Research, Development and Technology Services

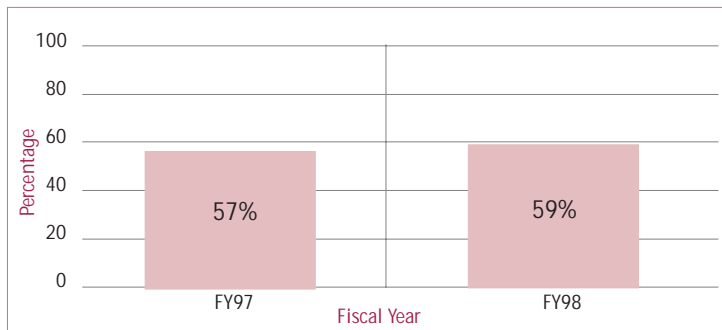
The intent of this goal is to create and sustain a one-stop shop within DoD for chemical, biological and smoke/obscurant materiel expertise. Our customer base is dynamic and their needs require service strategies that are flexible, timely and cost effective.

GOAL

Performance Measures - Demonstrating Progress Towards Our Goal

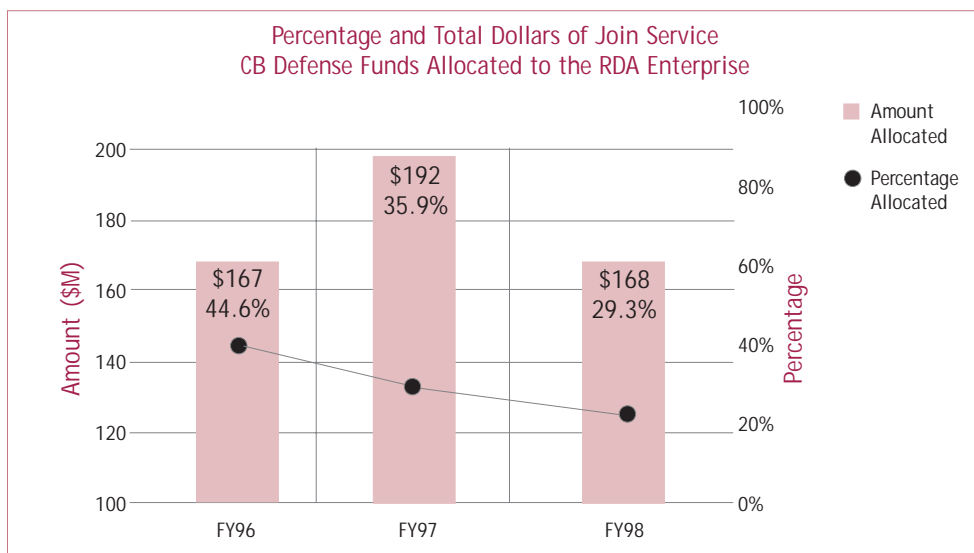
Percentage of joint service developmental programs executed by the RDA Enterprise

The number of joint service programs is decreasing as the services consolidate duplications. The RDA Enterprise has maintained the number of programs they execute over the past two years. We will continue to work towards becoming the NBC research, development and acquisition center of choice among all four services.



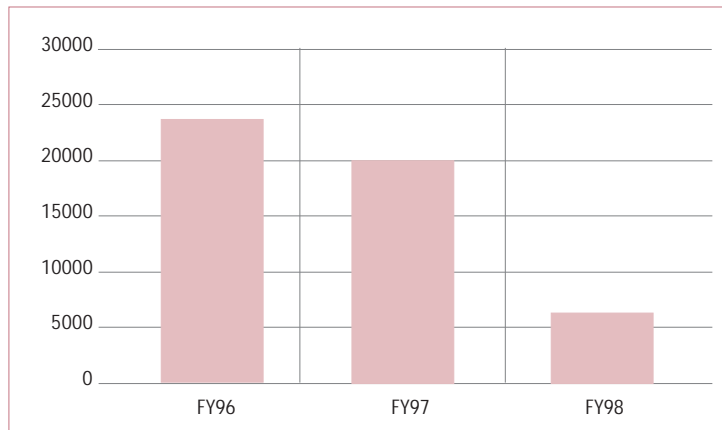
Percentage and total dollars of joint service CB defense funds allocated to the RDA Enterprise

In FY98, \$92,880K was allocated to CBD COM in Research Development Testing & Evaluation (RDT&E), which was 27% of the joint service RDT&E funds. Our Command was allocated 33% of the procurement funds (\$75,345K). During the fiscal year, the CBD COM RDA Enterprise executed an additional 47,160K in customer funds which includes funding from customers such as: Director of Safety Health and Environment, Program Manager for Chemical Demilitarization, U.S. Army Chemical School, U.S. Army Center for Health Promotion and Preventive Medicine, Program Manager Soldier, White Sands Missile Range, Program Manager Comanche, and Sandia National Lab. Total dollars of Joint Service CB defense funds allocated to the RDA Enterprise slipped from \$192 M in FY97 to \$168 M in FY98. The RDA Enterprise continues to increase customer funding to compensate for the downward trend in direct funding allocated to the Command.



Total dollars of demilitarization research and development funds allocated to CBDCOM

The figure below represents the amount of funding CBDCOM received from PMCD. PMCD has shifted from research and technology to destroying the nation's chemical stockpile. Our primary support has shifted to direct matrixed employees to PMCD as our expertise is needed. The FY98 figure does not reflect the funding received by CBDCOM for PM Alternatives Technology (\$29,993K) in FY98.



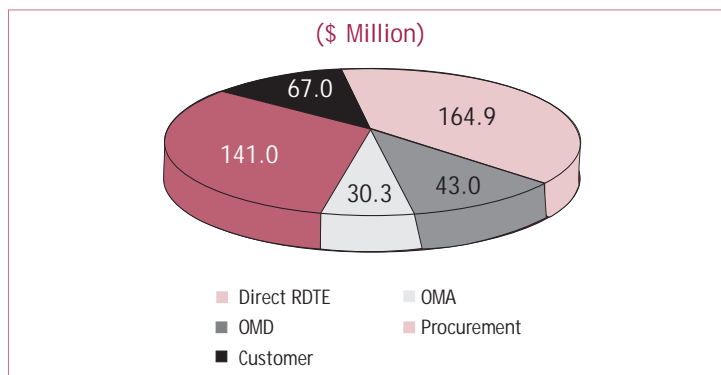
Ratings of customer and partner satisfaction from surveys

The chart below provides the results of the annual customer satisfaction survey for FY96, FY97 and FY98. We made progress in the areas of communication, follow-up support and delivering on time. Our survey will be modified in FY99 to cover the entire Command to include the Operations Enterprise. We will also develop strategies to increase Joint Service participation in our surveys.



Amount of RDA Enterprise “customer” funding

Customer funding still remains a critical piece of the RDA Enterprise’s total funding. In FY98 we received \$67M in customer funding. In order to maintain our core competencies, we must increase the funding we receive from customers. We will work to provide our CB expertise to those inside and outside DoD along with providing excellent customer service to our current customers.



Performance Goals - Working Towards Our Strategies

Demonstrate willingness to work with all relevant technologies, which might be of interest to customers

The Command continues to be sensitive to customer needs by working with all relevant technologies, of interest to our customers. For example, we are currently investigating applicable technologies for determining the residual life of chemical vapor filters. Surface Acoustic Wave (SAW) Sensors are under investigation as possible filter residual life indicators. Breakthrough tests demonstrated sensitive detection of Dimethyl Methylphosphonate (DMMP) at the filter effluent and inside the filter bed. Investigations are ongoing to determine the applicability of SAW sensors for detecting simulant vapor breakthrough in pre-humidified filter beds.

Another example is our current work on a degradable chaff. The degradable chaff, as well as standard chaff, were loaded as full rounds into various chaff packages and flight tested at Navy Research Lab Chesapeake Bay Detachment. The radar cross section of the degradable material was equivalent to that of standard chaff.

The R&T Directorate developed a plan to downselect technology and build a breadboard system for the Joint Service Agent Water Monitor. We completed a market survey in FY98 which yielded over 100 technologies. We then networked with CHPPM, Qtr Master, CEHR, TACOM, EPA, USGS, CIA. A blue ribbon panel list was developed and delivered to the contamination avoidance Commodity Area Manager for comment. A preliminary test matrix was developed and is expected to be scheduled for FY99.

Demonstrate flexibility in meeting schedules and cost constraints of potential customers

The CBDCOM continues to be the lead of joint programs in technology and engineering core competency. The FY 00-05 Program Objective Memorandum (POM) strategy directed new start development efforts in the commodity areas of collective protection and decontamination. The Army was appointed lead Service for new start Joint Transportable Collective Protection System (JTCOPS) and Joint Service Sensitive Equipment and Interior Decontamination Programs (JSSED). CBDCOM, in partnership with Soldier Systems Command (SSCOM), will provide leadership and direction in the execution of JTCOPS program and will be the lead agency for the technology transfer and execution of the JSSED program. Two initiatives by Congress (FY98 Budget) and the DoD Quadrennial Defense Review (QDR) accelerated a Joint Service Fixed Site Decontamination (JSFSD) program that will have CBDCOM providing execution assistance and leadership in the technology transfer, engineering and testing tasks to the lead service, U.S. Marine Corps.

CBD COM continues to partner with Army agencies and the Services by providing technical and engineering expertise to the Integrated Product Team (IPT) environment and Joint Commodity Area Manager (CAM) management structure for the DoD Chemical Biological Defense program. The teaming organization structure at CBD COM provides technical expertise to CAMs. The CBD COM RDA Enterprise individual protection core team located at ERDEC supports the Individual Protection commodity area team chaired by the Marine Corps. The core team also provides Enterprise coordination for masks and clothing.

The CBD COM RDA Enterprise continues to be aware of the needs of the customer. Congressional initiative in the FY97 budget mandated the launch of a stand off detection and assessment system, Scanning Airborne Emission for Gaseous Ultraspectral Analysis and Radiometric Detection (SAFEGUARD) program, in which both CBD COM and the Office of Research and Development focus on the Fourier Transform Infrared (FT-IR) sensor for this application. The RDA Enterprise has lead responsibility for this effort. Recognized customer satisfaction resulted in continued congressional additions to the CB Defense Budget during FY98. The ability of CBD COM RDA Enterprise to provide technical assessments and contributions has resulted in the transfer of a congressional initiated Biological and Chemical Individual Protection /Decontamination (BIOCIDE) program from the Navy to the Army and continued congressional support to the CB defense budget. A DoD force protection initiative in the FY99-03 POM strategy has resulted in the CBD COM RDA Enterprise to be called upon for value added assessment and planning for the defense of Military Installations. This leverages our Domestic Preparedness experience at CBD COM into the force protection initiative.

Command directorates have demonstrated flexibility in meeting customer schedules and cost constraints. We continue to provide uniform guidance to the Enterprise members of the CAM teams. During the 1QFY98, the Director of Engineering was named the formal Army representative of the JSMG Executive office. The Engineering Directorate integrated the team by co-locating the Business Management Office (BMO) team leader and key support personnel with the Director. Efforts continue to increase Command visibility and demonstrate our capabilities by having senior staff interact with customers and develop business opportunities in the marketplace. Organizational restructuring during the 4QFY98 will allow the Technical Director to devote a major portion of time to customers. The designated Associate Technical Director will be responsible for areas focused on financial and manpower resources, planning, and management controls. The Science Advisor/Deputy Director, Research & Technology will further assist the Technical Director by developing the CB core capabilities, improving the financial posture for smoke, and advising on important issues identified by the annual Technology Area Review and Assessment (TARA).

47

Demonstrate willingness to work closely with customers throughout development process and accommodate customer changes

The Advanced Systems Concepts Directorate will function as a support arm of the Office of the Technical Director by focusing on strategic vision leadership, business development, and management of international programs. Business development will include liaison activities, hosting visitors, public relations, and marketing. As part of the JSMG and Joint Science and Technology Panel for Chemical Biological Defense (JSTPCBD) processes, meetings are held at the locations of all Service partners. The Directors of ASCD and Engineering visited several Army customers as part of our customer satisfaction program. They also met with the Air Force at the Defense Special Weapons Agency (DSWA) at the Office of Secretary of Defense (OSD) level to discuss partnering for the Force Protection effort.

Be proactive in offering CB technical expertise to DoD, federal and international agencies on combating CB terrorism

The Command recognized that conferences and symposia are an effective medium to increase visibility about our CB technical expertise to the DoD, federal and international agencies on combating CB terrorism. CBD COM elements attended the following events during FY98: Biological Weapons Symposia; 21st Army Science Conference; 14TH Annual Security Technology Symposium and Exhibition; Worldwide Chemical Conference; and the Bio Warfare Convention in Switzerland.

Unparalleled expertise in CB defense has led to our appointment as a team member of the DoD CB Rapid Response Team (CB/RRT). The CB/RRT will provide support to the lead federal agencies, FBI and FEMA, responsible for crisis and consequence management respectively. We will be responsible for headquarters operations to include command, control, communications, and support staff for operations, logistics, risk management, legal, medical, and public affairs. CBDCOM will provide assets, as required, from the eight subordinate chemical storage depots located throughout the United States. The CBDCOM Technical Escort Unit will provide CB initial response with technical expertise to render safe, sample, monitor, detect, analyze, decontaminate, transport, mitigate and advise on CB defense.

Be proactive in offering CB technical expertise to DoD, federal, and international agencies on chemical treaties and international chemical weapons treaty related matters

Our Army Materiel Command (AMC) Treaty Laboratory will provide a chemical on-site laboratory capability with transportable laboratory equipment. During FY98, the AMC Treaty Laboratory completed and exceeded every requirement to become an Organization for the Prohibition of Chemical Weapons "designated lab" and shares perfect proficiency scores with five other nations' laboratories, thus achieving "best in the world status."

The Treaty Verification Team supported the Defense Special Weapons Agency and Defense Threat Reduction Agency (DTRA) R&D programs for on-site sampling and analysis by (1) adapting air sampling techniques to include the joint United States/Finnish sample preparation method; (2) and supporting the successful environmental testing of the SBCCOM-developed Microtest Screening Kit at the U.S. Army Dugway Proving Ground. The Command Center for Treaty Implementation and Compliance (CTIC), formerly the Chemical Treaty Compliance Team, successfully supported and served as the U.S. Army representative at the following OPCW Technical Secretariat inspections:

- 13 storage facilities (12 SBCCOM, 1 TECOM)
- 13 former production sites (all SBCCOM)
- 2 CWC Schedule 1 facilities (Chemical School and SBCCOM Chemical Transfer Facility)
- 5 destruction operations with continuous monitoring (2 SBCCOM)
- 4 destruction facility visits (3 SBCCOM, 1 TECOM)

The Command completed facility agreements for all 22 Army storage and production facilities. We also submitted supplemental data declarations and all CWC-required plans, reports, and notifications.

Be proactive in offering CB research and development expertise to DoD, federal, and international agencies on chemical treaties and international agencies

Efforts are ongoing to develop a target list of DoD, other federal agencies, and international agencies where there may be opportunities for our RDA Enterprise to offer their technical expertise in CB research and development. During FY98, the RDA Enterprise provided expertise to the Southwest Asia Cooperative Defense Initiative (SACDI), formerly the Gulf Cooperative Council and DoD's Force Protection Program. In conjunction with the Counterproliferation Policy Group, National Defense University and RAND, the Enterprise offered SACDI CB defense expertise in developing a CB defense program modeled after the U.S. Domestic Preparedness program. We also provided CB expertise to the DoD Installation Preparedness Initiatives tasked to apply CB defense to government installations and their surrounding areas. On September 2, 1998 personnel from Natick and CBDCOM participated in a new business "brainstorming" session to identify potential new business areas that could take advantage of current capabilities. Preliminary criteria for the assessment of these business areas were discussed and potential new business areas were categorized. The attendees performed a quick assessment of potential customers; initial investment required; risk; level of

synergy between Natick Research Development and Engineering Center (NRDEC) and Edgewood Research Development and Engineering Center (ERDEC); and availability of funds. A concept paper was developed to assign action items for the development of new business opportunities consistent with established concept plans.

Promote partnership with demilitarization program managers to encourage demilitarization technology development and evaluation

We provide support to PMCD by participating in the Alternative Technology for Bulk Agents and Assembled Chemical Weapons Assessment. The Chief Engineer and Environmental coordinator of the Engineering Directorate meet weekly with the Alternative Technology (for Bulk Agents) Team Leader to obtain the status of the program and monitor progress. The RDA leaders do not monitor the progress of the Assembled Chemical Weapons Assessment since they report directly to their PM, the Executive Director of CBDCOM. The team work on Bioremediation for Alternative Technology has been included in a National Academy of Sciences (NAS) study.

CB Services Directorate Chemical Applications Division supports the Alternate Technologies Program and the ACWA program in several areas. The process is tracked by meeting with the customer and defining discrete tasks to be accomplished and a schedule for completion. Interim progress reviews, monthly progress reports and meetings are conducted with the customer during the performance of each task.

Create NBC Defense Extended Enterprise

CBDCOM continues to partner with industry, the other Services, DoD and other government agencies to support roles in NBC defense research development and acquisition. The merger with Soldier Systems Command allows for enhanced partnerships in the community. Resources have been invested to make this merger successful to allow a “one-stop-shop” for the soldier.

49

Ensure development of science and technology that allows material developers to field inherently NBC survivable equipment

Several initiatives were completed in FY98 to add support of NBC contamination survivability (NBCCS) requirements for USAF and Navy developers, in addition to continuing to interface with Army developers. In order to demonstrate the RDA Enterprise's capabilities in NBCCS and related technologies, several presentations and proceeding publications were contributed to DoD Symposia and Work Groups.

A presentation and publication (in the Proceedings) were contributed to the 9th Annual US Army TARDEC Survivability Symposium, April 1998:

- > Shuely, Wendel J. “Chemically Resistant Materials and Test Methodologies for Vehicle Surfaces to Meet NBCCS Requirements.” April 1998. The RDA Enterprise's NBCCS capabilities for providing material screening and selection were surveyed in this presentation and demonstrated in application to screening fluorocarbon materials for NBCCS surfaces.
- > A presentation was contributed to the Defense Working Group Meeting on Nondestructive Testing, 3-7 November 1997 at Yuma Proving Grounds: Shuely, Wendel J. “Nondestructive Evaluation Methods for Detection of Defects in Protective Clothing by Use of Test Penetrants.” The presentation provided a summary of the development and applications of fluorescent penetrant solutions for detection of defects in chemical protective ensembles, shelters, and structures that might lead to failure to meet NBCCS requirements.

The RDA Enterprise participated in the Army Research Laboratory's WMRD FY99+ research planning meeting on 24-26 Feb 98 and contributed a briefing on FY99+ R&D that would assist PM's in meeting NBCCS requirements. Examples of topics covered included: New Specialized CARCs, Concurrent

Engineering Interactions between the RDA Enterprise and Project Engineers, Technology Forecasting for Advanced Chemically Resistant Materials, and Chemical Agents and Decontaminants as DoD Critical Fluids.

The RDA Enterprise participated in the MURI Review (5-6 March 1998) of the ARL program on 'Functionally Tailored Textiles and Fabrics.' Contractor investigators were provided guidance on chemical agent interactions with materials to support incorporation of NBC survivable materials into DoD materiel. Future collaborations were planned that would provide materials for surfaces that were NBCCS resistant or that would serve as imbedded sensors on DoD materiel. Consulting on candidate simulants and test methods was provided during visits with contract investigators.

Improve CBDCOM's Management Practices - Become a High Performing Organization

The main objective of goal six is to improve CBDCOM's management practices by achieving resource objectives, adapting Total Quality Management practices and creating enterprise organizational partnerships with industry, all military Services, DoD and other Federal agencies.

GOAL
6

Performance Measures - Demonstrating Progress Towards Our Goal

Scores on assessment of CBDCOM against President/Baldrige Award criteria

Due to the merger of CBDCOM and SSCOM, the Command chose not to assess the organization against the President/Baldrige Awards criteria.

Percentage of CBDCOM selected sub-units and business partners certified to International Organization for Standardization (ISO) 9000/14000 standards against plan

CBDCOM Sub-Unit Maintaining Certification in FY98

Anniston Chemical Activity*	CASARM Program
Blue Grass Chemical Activity*	Chemical Evaluation Team
Deseret Chemical Depot*	Physical Evaluation Team
Pine Bluff Chemical Activity*	Treaty Team
Pueblo Chemical Activity*	Edgewood Research and Development Center*
Umatilla Chemical Depot*	Newport Chemical Depot*

* Certified for air monitoring operations only

CBDCOM Elements seeking Certification in FY98

Technical Escort Unit

CBDCOM Contractors Achieving Certification in FY98

Ralph M. Parsons	Battelle HMRC
IIT Research Institute	ILC Dover
Midwest Research	Geomet Technologies
EAI Corporation	

CBDCOM Contractors Seeking Certification in FY98

Intellitec	Quicksilver Analytics	Battelle Analytical Chemistry Lab
------------	-----------------------	-----------------------------------

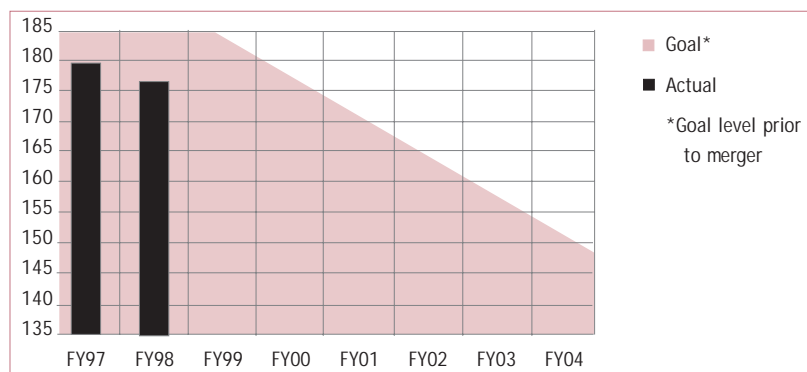
Total recurrent releases of toxic chemicals and disposal of hazardous waste measured in pounds

The process of storing the stockpile, demilitarization and environmental remediation causes an increase in the hazardous waste level. It is therefore the decision of the Command to focus efforts on pollution prevention and reducing hazardous waste where appropriate, while our mission is ongoing.

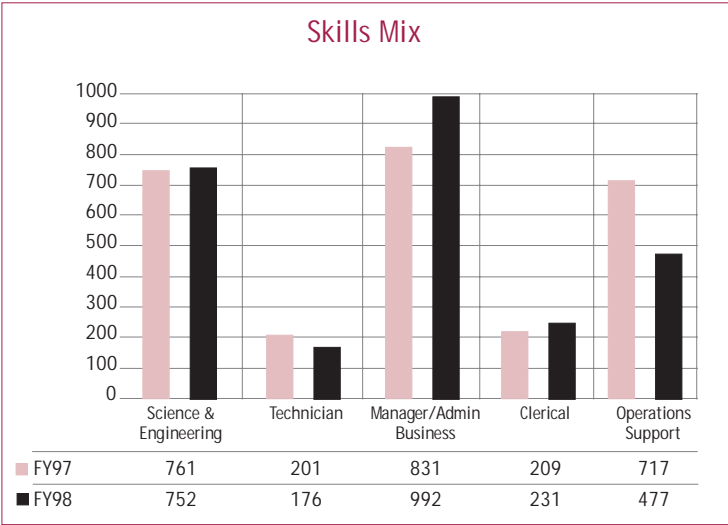
As we progress with the elimination of the stockpile and finish our environmental programs, the hazardous waste level will drop sharply in the out years.

Annual progress toward resource objectives by high grades, supervisory ration, skills mix, and restraints on human resources

We are below our goal of 185 for high grades. We expect to fill these positions, although it takes longer to recruit senior personnel. The operational stockpile sites also take longer to fill positions. In addition, until the merger process was finalized on 1 October 98, many positions were placed on hold.



Supervisory ratio for FY98 was 10.7 whereas we projected the supervisory ratio for FY98 at 12.0. We will continue to work to meet this goal. Our more distant locations have a small staff which causes the supervisory ratio to be lower. We are still hiring employees at the stockpile sites and RMA.



As illustrated in the chart above, our skill categories remain stable except for the management and operations support categories. We were unable to fill our operations areas with personnel as quickly as other areas.

Performance Goals - Working Towards Our Strategies

Develop an overarching plan to guide certification of selected CBDCOM business units to ISO 9000/14000 (include resources and timeline)

Development of an over-arching plan to guide certification of selected CBDCOM business units to ISO 9000/1400 is crucial to adapting and implementing a Total Quality Management (TQM) management philosophy. In the midst of restructure and merger with Soldier Systems Command, the CBDCOM Directors are in the process of establishing which SBCCOM processes require ISO 9000 certification. During the 1QFY98, the ERDEC Surety office was recommended for ISO 9002 registration by the National Quality Assurance USA and achieved ISO 9000 certification by 4QFY98. ISO 9000 quality standards for monitoring and chemical operations teams were maintained during FY98. The ERDEC Safety Office completed an ISO 9002 Quality manual for the analysis of samples containing radionucleotides utilizing scintillation spectroscopy. Safety Office personnel initiated ISO 9002 program and conducted an internal audit during 4QFY98 that produced no significant findings. The external audit agency National Quality Assurance USA is scheduled to audit the process during 1QFY99.

We pre-positioned ISO 9000/14000 contracts in case FY97 year-end money became available. Unfortunately, funding was not available. Contract efforts were underway during the first quarter of FY98 to assist the Operations Directorate, ERDEC, in becoming ISO 14000 certified. Efforts were halted during the second quarter of FY98 due to lack of funding. The contract that was in place was cancelled at that time.

Develop overarching plan to guide certification of selected CBDCOM business units to ISO9000/14000

Teams within R&T Directorate that have quality manuals have implemented them for the Alternate Technology effort. These same teams are striving to cover all of their activities under ISO 9000/ ISO Guide 25 as appropriate. Efforts are currently underway to involve all R&T Directorate teams. A study was conducted on the feasibility of having the Process Engineering Facility (PEF) certified under ISO. The study

examined processes, record keeping and personnel needs, and estimated the cost at approximately \$200k per year. It is recommended to have the PEF certified by 4Qtr 99.

Ensure information is managed effectively and available to all those who need it

An effective organization must have a communications infrastructure that is technologically proficient, effectively managed, and accessible to all personnel. The Command information management system has been converted from high use legacy systems to the new web environment. Low use systems continue to be evaluated and either converted or eliminated. User assessments to determine requirements for the information management system are complete and updated on an as needed basis. The forms processor is still under development to migrate legacy systems to the new environment. This system has since been redesigned into a modular format using several commercial software products. The bulk of the workflow programming was completed during the 3rd quarter and some of the easier forms will be introduced to CBDCOM users as appropriate. However, the widely used 3953 purchase request form will not be introduced until after the end of the yearly purchasing cycle. This was a joint decision between Corporate Information Office (CIO) and the proprietary book office not to have the users switch systems in the middle of the heavy purchasing season. B-board, a Unix based system, has been developed in a web environment and was activated in the intranet during the fiscal year. The intranet policies, procedures, and architecture are complete. All pages are conforming to the standards and the intranet contains Command information. In the interest of security, a firewall system has been designed and initiated a user policy compatible with the firewall.

Develop the practices of a quality organization

In the midst of increased public and economic pressures, the U.S. Army moved to restructure the subordinate Command's within the AMC. As mandated by the U.S. Army, two premier Army Commands, Soldier Systems Command and Chemical Biological Command merged to form Soldier and Biological Chemical Command. This merger had implications on the quality practices outlined in the FY98 performance plan. The submission of application to both the Maryland Quality Award and the President's Quality Improvement Award did not occur due to the Command merger. Therefore, the performance measure to track scores on the assessment of CBDCOM against President/Baldrige award criteria was not computed in FY98.

Manage all programs by decentralizing authority (empowerment) and using self-managed teams/organizations

Diversity in teaming and partnership are business practices crucial to meeting the mission objectives of the Command. For instance, the Command recently awarded the contract package for the LVOSS to an alliance of small businesses and the Choctaw Indian Nation. The alliance for production of the LVOSS launcher hardware was showcased at the grand opening of the new Centech production facility in Hugo, OK on August 6, 1998. Representatives from the Deputy Chief of Staff, Operations and Plans (DCSOPS), PM Smoke/Obscurants, AMC Acquisition Center, Centech, the Choctaw National Council, Oklahoma State Government Officials, and community leaders of Hugo, OK participated in the ground breaking ceremony. The team successfully completed the production verification test of the LVOSS L96/97 Grenade at Dugway Proving Grounds, Utah on September 17, 1998.

Curtail nonessential activities which add to CBDCOM's hazardous waste generation

Consistent with becoming a high performing organization, the Command aggressively pursued measures to curtail nonessential activities, which add to CBDCOM's hazardous waste generation. The CBDCOM Chemical Operations Directorate supports the chemical stockpile remediation business area by performing storage, surveillance, inspection, reconfiguration, testing and demilitarization of the nations chemical weapons stockpile.

The use of HAZMATS and the generation of hazardous waste are inherent in accomplishing this mission. In

response to the generation of hazardous waste, the Command developed the CBDCOM Pollution Prevention (P2) in Acquisition Program in April of 1995. The objectives of the program are as follows: review technical documentation; identify opportunities to reduce or eliminate the use of HAZMATs and ozone-depleting chemicals and make appropriate revisions to those documents by 1999; eliminate or reduce the unnecessary acquisition of products containing HAZMATs; and reduce the manufacturing, processing and use of products containing HAZMATs. The P2 in Acquisition Program seeks to integrate and augment pollution prevention activities currently underway in industry and other federal agencies to the maximum extent possible.

As part of an outreach and integration initiative, the P2 in Acquisition Program designed a booth for display at conferences and symposium in February FY98. The booth was focused on the five thrust areas identified as the greatest sources of CBDCOM pollution in acquisition: composition, cleaning, performance, quality assurance and packaging. The booth was displayed at the following conferences/symposiums during FY98:

Conference	Location	Dates
24th Environmental Symposium and Exhibition	Tampa, FL	6-9 April 1998
Army Acquisition Pollution Prevention Program In-Process Review	Dayton, OH	2-4 June
Worldwide Chemical Conference and Exhibition	Fort McClellan, AL	23-25 June
3rd Annual Joint Service Pollution Prevention Conference and Exhibition	San Antonio	25-27 August

As part of the overall waste management plan, the Risk Management Directorate conducted reviews of standardized technical documents to identify requirements for hazardous materials and ozone depleting chemicals. During the fiscal year the following documents were reviewed: 112 Spec/Std., 358 PDs, 219 TMs, and 32 DMWRs. There was a line by line review of potential hazardous specifications and standards for which CBDCOM has prepotency. Only 84 actually contained requirements for HAZMATs and/or ODCs. The line by line review of the 108 purchase descriptions contained requirements for HAZMATs and/or ODCs categories including: solvents/cleaners, composites, packaging, operational, and Quality Assurance/Quality Control. It would not be cost effective to find alternatives for the HAZMATs in this category.

The following provides a summary list of FY98 and projected P2 in Acquisition Program projects designed to develop, test and evaluate innovative pollution prevention technologies to replace required hazardous materials and waste generating processes outlined by the technical documents.

Project Title	Completion Date
1. Aperture Card Replacement	30 June 1998
2. Elimination of Paraffin Waste	30 September 1998
3. Waste Minimization at TTF	Indefinite Hold
4. White Smoke Grenade	30 September 2000
5. Colored Smoke Grenade	30 September 1999
6. Incendiary Grenade	30 September 1998
7. Fog Oil Replacement	31 March 2001
8. Gas Life Testing	30 September 1999
9. Eliminate DOP from Filter Testing	30 September 1998
10. P.L. Project #1	30 September 1998

Efforts are currently ongoing to reduce toxic pollutants through acquisition, procurement, and revision of the technical documents. The Acquisition Improvement Team has amended contractor statements of work (SOW) and request For proposal (RFP) to include environmental, safety and health considerations mandated

by DoD directive 5002.R. The amended paragraphs state the following: that the contractor shall avoid the use of toxic chemicals, hazardous materials, ozone depleting substances in system(s) design and operational support; the contractor shall maintain a hazardous materials management program plan in accordance with National Aerospace Standards (NAS) to minimize or eliminate the hazardous materials in the system and related operational/support processes; and finally, the contractor shall document the effort to eliminate or reduce the use of hazardous material in the procured system. These reports and overall hazard minimization and pollution prevention program progress are reviewed during quarterly Integrated Program Reviews (IPR).

Develop a workforce for the 21st Century

The Command merger that took place October 1, 1998 emphasizes the need to develop a workforce for the 21st Century. CBDCOM management has modified and transitioned efforts toward a human resource plan that outlines the future skills required and a mechanism for balancing personnel across all the new business areas generated from the merger. The workforce strategies outlined in the FY98 performance plan had to be modified to facilitate the Command merger process. The assessment of out-year skill requirements across all business areas is ongoing within the context of Command reorganization and merger. We began the assessment of personnel to make assignments of people within the new organization. Restructuring activities concentrated on placing personnel into new areas that need to be developed as part of the new SBCCOM structure. A skills inventory was not done in FY98 because the definition and development of the skill inventory will be worked into the "home base personnel concept." The decision on how to address this issue was made at the Commanding General level and implementation will occur during FY99. The gap issue between requirements and inventory has not been specified. It is expected that the home base personnel concept will allow identification of skills requirements for the emerging organization. Resource Management and Administration is currently going through reorganization and efforts will eventually focus on developing a plan to realign skills across all business areas in the new Command.

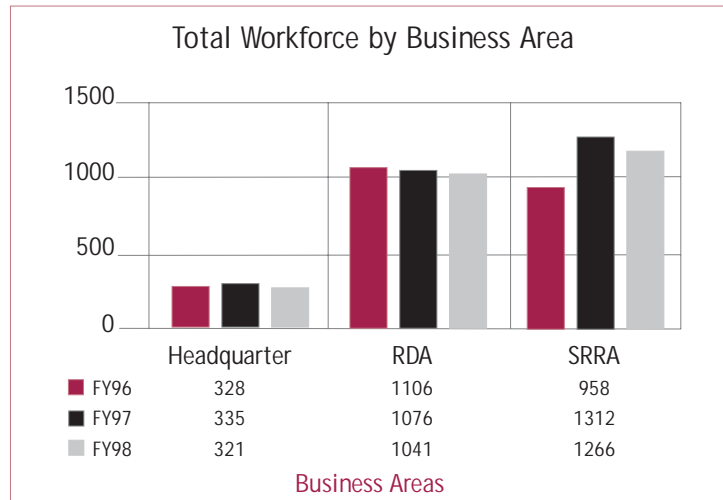
Behavioral based interviewing had been adopted for all key positions. Most direct funded teams and their support teams have active business plans. A common format for team business plans was not established as outlined in the FY98 performance plan. Instead, a minimum set of data items will be established in order to allow flexibility to meet individual team needs.

Biological defense is an extremely important area for the new Command's future. To this end, we strived to integrate and cross-train molecular biology and bioprocess engineering personnel. The Bioprocess Engineering Team and Molecular Recognition Team were combined, co-located, and renamed the Molecular Engineering Team. A schedule for cross-training personnel on key techniques including fermentation, protein purification, lyophilization, and gene cloning was implemented and completed, and standard protocols were written.

PERSONNEL & RESOURCE

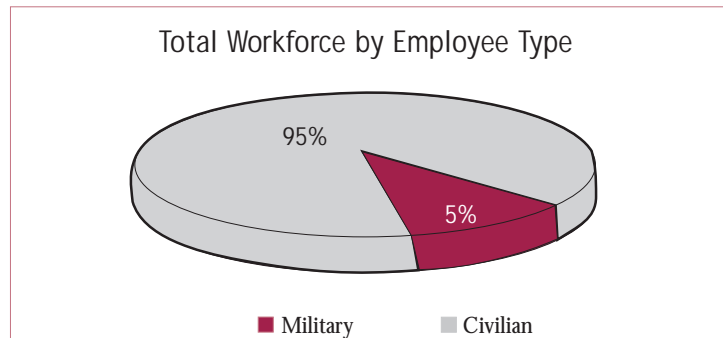
The Personnel and Resource section of this annual report presents our internal environment (financial and manpower) during FY98. Projections beyond FY98 are limited due to the merger.

Our manpower figures reflect our compliance with higher headquarter guidance. Our end strength at the end of FY98 was 2628 (target was 2765).



After a 37% increase in the SRRA business area from FY96 to FY97, the business area was relatively stable for FY97 to FY98 with a 3.5% decrease. The initial increase reflected the operational control of Pueblo, Umatilla, and Deseret. The Program Budget Guidance (PBG) from higher headquarters dictates a reduced end strength in the RDA mission area while headquarters personnel was expected to remain stable.

Our workforce continues to be made up of approximately 5% military (139 personnel) and 95% civilian (2628). We expect the number of military personnel to decrease in the future.



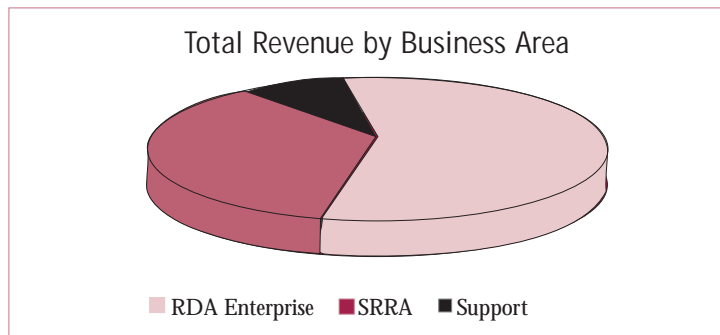
Our workforce remained relatively stable with a decrease of 5%. As expected, we decreased in the Headquarters by 4%, decreased in the RDA Enterprise by 3% and decreased in the Stockpile Restoration Remediation Activities (SRRA) 3.5%.

Civilian	2628
Full Time Permanent	2598
Part Time Permanent	24
Full Time Temporary	4
Part Time Temporary	2
Military	139

Total Revenue by Business Area (\$M)

RDA Enterprise	446.2	
Direct	379.2	
Army Customer	50.8	
Other Customer	16.2	
SRRA	325.2	
Direct	222.9	
Army Customer	2.6	
Other Customer	99.7	
Support	20	20
		791.4

SRRA's direct funding supports the storage of the Nation's chemical stockpile at the eight sites, operation of TEU and RMA. As expected revenue increased for the SRRA business. The RDA Enterprise also had an increase in revenue which reflects their participation in the Domestic Preparedness program.



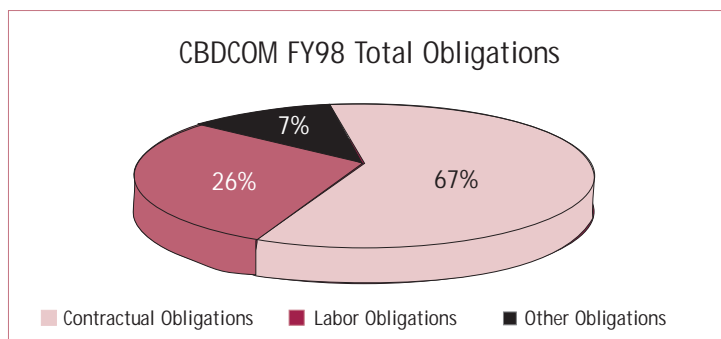
59

Funding Source	FY95 (\$M)	FY96 (\$M)	FY97 (\$M)	FY98 (\$M)
Joint NBC Defense	—	281.3	242.7	233.7
PMCD	73.6	72.9	66.1	75.9
ACALA/Rock Island	7.9	11.2	10.1	6.2
Defense Special Weapons Agency	3.4	9	1.6	0.9
Navy	3.1	3.7	19.1	12.2
Air Force	1.3	2.3	2.1	2.5
BMDO	—	1.6	1.6	2.7
Direct Funds	312.4	156.8	224.2	308.1
All Other	248	127.3	75	34.3
Total	649.7	666.1	642.5	676.5

The increase in direct funds reflects funding for Domestic Preparedness and ACWA. The Domestic Preparedness mission is expected to be transferred from DoD to the Department of Justice in the future.

CBD COM FY98 Total Obligations (\$M)

Contractual Obligations	418.9	EOR 25 series FYTD
Labor Obligations	165.6	EOR 1000 series FYTD
Other Obligations	45.3	All other EORs FYTD
Total Obligations	629.8	



ACADA	Automatic Chemical Agent Detector/Alarm
ACTD	Advance Concept Technology Demonstration
AICPS	Advanced Integrated Collective Protection System
AMC	Army Materiel Command
A&T	Acquisition and Technology
ATD	Advanced Technology Demonstration
BAWS	Biological Aerosol Warning System
BIDS	Biological Integrated Detection System
BIOCIDE	Biological and Chemical Individual Protection/Decontamination
BLWE	Battle Lab Warfighter
BMO	Business Management Office
BRAC	Base Realignment and Closure
BW	Biological Weapons
CAIRA	Chemical Accident/Incident Response Assistance
CAM	Commodity Area Manager
CAMDS	Chemical Agents Munitions Disposal System
CB	Chemical Biological
CBDCOM	Chemical and Biological Defense Command
CB/RRT	Chemical Biological/ Rapid Response Team
CD	Compact Disk
CIO	Corporate Information Office
CPIP	Cost/Productivity Improvement Program
CW	Chemical Weapons (Warfare)
CWC	Chemical Weapons Convention
DA	Department of the Army
DCSOPS	Deputy Chief of Staff, Operations and Plans
DIS	Distributed Interactive Simulant
DMMP	Dimethyl Methyl Phosphonate
DoD	Department of Defense
DP	Domestic Preparedness
DSI	Distributed Interactive Internet
DSWA	Defense Special Weapons Agency
EDT	Engineering Development Test
EOC	Emergency Operations Center
ERDEC	Edgewood Research Development and Engineering Center
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FORSCOM	Forces Command
FSL	Federal State and Local
FY	Fiscal Year
HAZMAT	Hazardous Material
IC	Initial City
ICAM	Improved Chemical Agent Monitor
IED	Improvised Explosive Device
IPR	Interim Program Review
IPT	Integrated Process (or Product) Team
IRF	Initial Response Force
IRP	Improved Response Program
ISO	International Organization for Standardization

ACRONYMS

Acronyms, continued

IV&V	Independent Validation and Verification	PMCD	Program Manager Chemical Demilitarization
JCAD	Joint Chemical Agent Detector	POC	Point of Contact
JCOPS	Joint Transportable Collective Protection Program	POM	Program Objective Memorandum
JSFSD	Joint Service Fixed Site Decontamination	PPE	Personal Protective Equipment
JSGPM	Joint Service General Purpose Mask	Q	Quarter
JSLSCAD	Joint Service Lightweight Standoff Chemical Agent Detector	QDR	Quadrennial Defense Review
JSMG	Joint Service Materiel Group	RC	Reserve Component
JSED	Joint Service Sensitive Equipment Decontamination	RDA	Research Development and Acquisition
JSTPCBD	Joint Science and Technology Panel for Chemical Biological Defense	RDIS	Remediation Design and Implementation Schedule
JWARN	Joint Service Warning and Reporting Network	RDT&E	Research Development Test and Evaluation
LNBCRS	Lightweight NBC Reconnaissance System	RFP	Requests for Proposal
LR-BSDS	Long Range – Biological Standoff Detection System	RMA	Rocky Mountain Arsenal
LTIR	Lost/Reduced Time Incident Rate	ROD	Record of Decision
LVOSS	Light Vehicle Obscuration Screen System	RVO	Remediation Venture Office
M	Millions	SACDI	Southwest Asia Cooperative Defense Initiative
MICAD	Multipurpose Integrated Chemical Agent Detector	SAFEGUARD	Scanning Airborne Emission for Gaseous Ultraspectral Analysis and Radiometric Detection
MOA	Memorandum of Agreement	SAW	Surface Acoustic Wave
MOGAS	Motor Gasoline	SBCCOM	Soldier and Biological Chemical Command
MRIC	Munitions Rule Implementation Council	SGS	Smoke Generator Set
NAS	National Academy of Sciences	SOP	Standard Operating Procedures
NAS	National Aerospace Standards	SOW	Statement of Work
NBC	Nuclear Biological Chemical	SRF	Service Response Force
NBCDS	Nuclear Biological Chemical Defense Systems	SRF	Stockpile Response Force
NMR	New Materiel Release	SRRA	Stockpile Restoration Remediation Activities
NRC	National Regulatory Council	SSCOM	Soldier Systems Command
NRDEC	Natick Research Development and Engineering Center	S&T	Science and Technology
ODC	Other Direct Charges	TARA	Technology Area Review and Assessment
OEC	Operational Evaluation Command	TC	Type Classification
OSHA	Occupational Safety and Health Administration	TEU	Technical Escort Unit
OSD	Office of Secretary of Defense	TOCDF	Tooele Chemical Disposal Facility
P2	Pollution Prevention	TQM	Total Quality Management
P3I	Pre-Planned, Product Improvement	TRADOC	Training and Doctrine Command
PAO	Public Affairs Office	US	United States
PAWS	Phased Array Warning System	USACE	United States Army Corps of Engineers
PBG	Program Budget Guidance	USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
PL	Public Law	USACMLS	United States Army Chemical School
PM	Program Manager	USAF	United States Air Force
PMC	Program Management Contract	USMC	United States Marine Corps
		WAN	Wide Area Network
		WMD	Weapons of Mass Destruction



On 1 October, 1998 the U.S. Army Chemical and Biological Defense Command merged with the U.S. Army Soldier System Command to form the U.S. Army Soldier and Biological Chemical Command. This strategic move combines soldier, biological and chemical expertise into one Command

allowing synergy of expertise and integration of systems to support our military forces. In addition, the new Command will provide our force with expertise in homeland defense and civilian communities with increased domestic preparedness against a terrorist threat.

FUTURE FOCUS

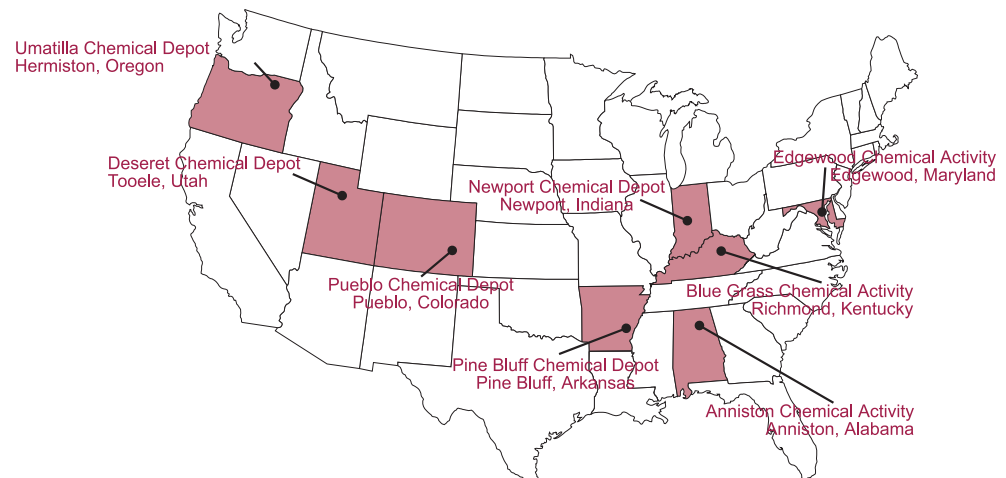
Our doorway to the future: The Soldier and Biological Chemical Command Merger

Organization

The new U.S. Army Soldier and Biological Chemical Command integrates the combined capabilities of both the Natick and Edgewood Area. One of the benefits is the synergy of all soldier items into one Command. For the first time everything that the soldier wears or carries will be developed and fielded by one Command. SBCCOM is unique in having responsibilities in the entire life cycle from basic research through development to fielding to sustainment support. The new Command retains responsibility for traditional missions such as the following:

- Research, Development and Acquisition of NBC defense systems
- Remediation and safe storage of the Nation's chemical weapons stockpile
- CB Emergency preparedness and response
- Maintaining a center of excellence for chemical and biological expertise
- Research, development and acquisition of food, clothing, shelter, air delivery systems and soldier support items
- Improve soldier's warfighting capabilities and quality of life
- Protection against battlefield threats and environmental conditions
- Enhancing center of excellence for soldier system support

The SBCCOM spans the nation to support soldier missions globally and chemical stockpile/demilitarization functions. Our headquarters is located at the Edgewood Area of Aberdeen Proving Ground, MD along with our CB Center of Excellence. The Soldier Center of Excellence is located in Natick, MA along with the Integrated Material Management Center (IMMC). The NBC defense and smoke portion of the IMMC is located at Rock Island, IL. A component of the Project Manager for Soldier is located at Fort Belvoir, VA. SBCCOM manages eight chemical storage sites throughout the United States.



SBCCOM organizational structure includes project and product managers with responsibility for developing and fielding equipment across the mission areas. The project/product managers essential to our mission are as follows:

Project Manager - Soldier

Integrates the research, development and procurement of items worn, carried, and consumed by the soldier. The Project Manager Soldier manages and integrates the following two Product Manager areas:

1. Product Manager - Land Warrior - Manages the development, configuration and fielding of integrated soldier systems.
2. Product Manager - Enhanced Soldier Systems - Manages full life cycle for clothing and individual equipment.



Major General
Doesburg and Major
General Friel at the
Change of Command
Ceremony on 2 July
1998

Project Manager for Nuclear, Biological and Chemical Defense Systems

Responsible for Army and Joint development, testing, production, fielding, and logistics support of assigned nuclear, biological, and chemical (NBC) defense systems to include detection, respiratory protection, and reconnaissance systems. The Project Manager for Nuclear, Biological and Chemical defense systems manages the functions of the Product Manager NBC Reconnaissance Systems, who is responsible for the management, development, fielding, and support of the Fox NBC Reconnaissance system.

Program Director for Biological Defense

To be responsible for development, production, fielding, and logistics support of assigned biological defense systems in the area of detection.

Program Manager for Soldier Support

Responsible for the development, procurement and fielding of quality soldier support products required by the soldier and the force projection army. The development, production and deployment of Army field feeding systems, aerial delivery systems, unit/organizational equipment, field service equipment and shelter commodity area.

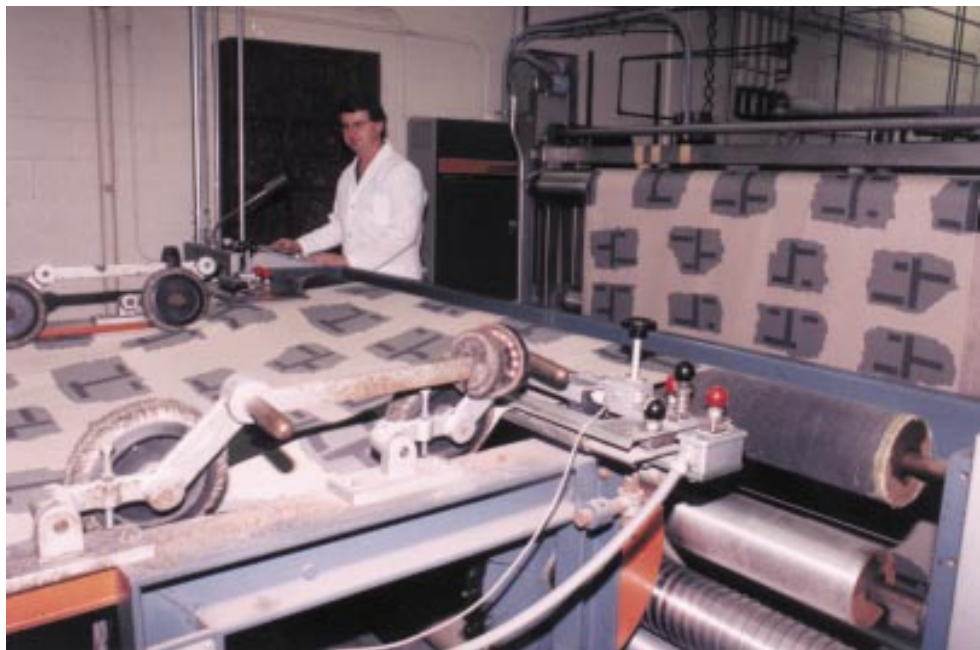
Product Manager for Smoke/Obscurants

Manages and directs all aspects concerning development, production and fielding of smoke and obscurant systems/products. These included large area smoke and rapid obscurant smoke (visual, infrared and millimeter wave).

Product Manager - Force Provider

Development of the containerized, highly deployable "city," designed and engineered to provide climate controlled billeting, dining facilities, showers, latrines, laundry, and morale, welfare and recreation facilities in modules for 550 soldiers.

Due to our particular mission, the Natick and Edgewood areas maintain several specialized facilities unique not only to the Department of Defense, but to the Nation and the World. These facilities are designed specifically to develop and test a variety of NBC defense equipment and everything the individual soldier wears, carries and consumes. The following narratives provide the name and a brief description of the function these facilities provide to achieve the overall mission of SBCCOM.



Doriot Climatic Chambers: These chambers provide two large wind tunnels and two smaller conditioning rooms to test new clothing, shelters, airdrop equipment and other development items of SSCOM. The range of temperature encompasses -70 to +165 degrees with relative humidity ranges of 10 to 90 percent and rain and wind conditions of up to four inches per hour and 2 to 40 MPH, respectively.

Camouflage Evaluation Facility (CEF)/Terrain Analysis

System (TAS): The Camouflage Evaluation Facility (CEF) provides the ability to evaluate current and experimental camouflage patterns year-round. The settings consist of scenes that serve as a controlled background for evaluating camouflage including: woodland, desert, urban and winter environmental settings. Live plants and desert sand add realism for in-house measurements. The facility is equipped with special lighting that can be adjusted to simulate different levels of moonlit and moonless skies. The Terrain Analysis System (TAS) also located in the CEF, allows experimental camouflage patterns to be designed based on actual terrain reflectance data.



Fabric Dye, Printing and Finishing Pilot Plant: Researchers conduct experimental trials and development work in support of combat clothing and textile-based equipment such as backpacks and tentage. It provides the capability to dye, print and apply finishes to textiles, produce full width small quantities of prototype materials for R&D and quick reaction needs, produce printed camouflage patterns based on standard and experimental designs and research functional finishes for protection optimization for flame retardancy and water repellency. This facility reduces developmental time and cost prior to transitioning to production.

Computer Aided Design (CAD) and Rapid Prototyping: This is a useful tool for evaluating components/system design issues prior to actual fabrication. In some cases, the prototype can be used directly for manufacturing actual parts. This system allows for the fast, efficient, and cost effective development of systems, and their components while conducting “what if” studies for optimization.

Food Processing Pilot Plant: This facility provides specialized pilot plant scale production-sized equipment for the development of new or novel ration components.

Modeling, Simulation & Analysis Center - provides a wide range of modeling and simulation capabilities, including JANUS, Modular Semi-Automated Forces (ModSAF), Extended Air Defense Simulation (EADSim), high definition terrain visualization and, at the core, the Integrated Unit Simulation System (IUSS). This system is designed to provide material developers the analytic tools required to assess alternative Soldier System concepts in an operational environment, to include chemical and biological arenas. The IUSS provides high resolution simulation of combat, operations other than war, and wartime support activities. The IUSS focuses specifically on the effects of combat systems (e.g., lightweight chemical protection) on individual performance within the context of small unit (e.g., team, squad, or platoon) mission tasking.

Inhalation Toxicology Laboratory - has the unique capability to test neat agents and allows for specific animal testing for acute, subchronic and chronic toxic effects. It can also test materials via pyrotechnic or explosive dissemination and the analytical capability to characterize the resultant cloud for vapor and aerosol components.

Explosive Test Chamber - allows research and development testing of a wide range of chemical agents and simulants against prototype detection, protection and decontamination equipment. The chamber has a

16,000 cubic foot volume which can be controlled and maintained at -50 degrees F to 165 degrees F. Detonations of up to one pound TNT equivalency is possible.

Super Toxic Facility - supports DoD CB defense Research and Development (R&D) and intelligence sampling analysis. This facility can analyze any toxic chemical agent using the only nuclear Resonance Laboratory in the United States certified for chemical surety material.

Laser Spectroscopy Laboratory - assists in the development and tests new concepts for detecting and identifying CB warfare agents using optical and mass spectrometric approaches. Laser-based approaches for both chemical and biological standoff detection have been developed and applied by this laboratory.

Forensics Laboratory - formerly known as the AMC Treaty Laboratory, provides sampling and analysis capabilities required to support the United States in bilateral and multilateral chemical warfare treaties. The FBI is providing funding to the laboratory to increase biological testing capabilities to Bio-Level III. These upgrades will give the laboratory the capabilities necessary to support the domestic terrorism cell of the FBI. This laboratory continues to receive the highest possible scores on the proficiency tests issued by the Organization for the Prohibition of Chemical Weapons (OPCW). All analytical activities of this laboratory are ISO 9001 and ISO Guide 25 compliant. Laboratory accreditation was granted by an internationally recognized organization, the American Association for Laboratory Accreditation (AALA). Our laboratory has a unique "flyaway laboratory" that can project its analytical capabilities worldwide to any chemical weapons inspection site.

Nuclear Magnetic Resonance (NMR) Laboratory - maintains surety NMRs for kinetic studies and characterization of unknowns in a liquid state and sorption studies of solids. This capability allows SBCCOM to support the Chemical Agent Standard Analytical Reference Materiel programs, United Nations Special Commission (UNSCOM), CWC Treaty, and the Alternative Technology Program.

Design Evaluation Chemical Surety Laboratory - is a unique environmental chamber used to certify for chemical surety materiel and to evaluate multiple detectors in hot or cold temperatures. A vapor challenge/vapor permeation apparatus can concurrently evaluate 12 swatches of material.



SBCCOM's Vision

Dynamic Enterprise - The Catalyst for Global Protection

Values

Our values are the principles, standards, and qualities our organization follows to accomplish our mission, achieve our goals and attain our vision.

Leadership (People)	We look beyond today and create a shared vision of our future. We have the confidence to empower our people to act with total authority, within defined guidelines, to achieve great things for our customers.
Teamwork	We trust our people to act fairly and honestly in achieving common team goals. Teams will succeed by sharing ownership and responsibility for their results.
Integrity	We do the right thing, for the right reason, while adhering to the highest principles of ethical conduct.
Customer Satisfaction	We listen to our internal and external customers, focus on their needs, and commit to exceeding their expectations.
Communication	We inform, listen to, seek to understand, and respond with openness, honesty and respect for each other.
Continuous Improvement	We encourage and inspire each other to continuously seek excellence in our processes, facilities, services and products.